

CTO

THE MAGAZINE FOR INFORMATION EXECUTIVES

MARCH 15, 1994

VOLUME SEVEN NUMBER ELEVEN

SEVEN DOLLARS

COVER STORY

Reengineering All-Stars

*How To Benchmark
Your Way To Global
Process Redesign*

ALSO INSIDE

**Analyzing Data
For Fun And Profit**

AN INTERNATIONAL DATA GROUP PUBLICATION

**Tambrands Inc.'s
Diane Forrest**



P u t t i n g I m a g i n a t i o n

BSN © Digital Equipment Corporation 1994. The Digital logo and OpenVMS are trademarks of Digital Equipment Corporation. DOS, Windows and NT are registered trademarks of Microsoft Corporation. OS/2 is a registered trademark of International Business Machines Corporation. MAC is a registered trademark of Apple computer. UNIX is a registered trademark of UNIX System Laboratories.

Imagine Moving Your Business Critical Applications To Client/Server. Now Imagine It's Not As Risky As You Think.

The idea of entering a client/server environment may at first seem a bit perilous. But it's a move that will dramatically improve the efficiency of your business. And with Digital you'll have an array of proven products that offer the

protection of a steel cage.

Our Open Client/Server products let you move your mission critical applications more efficiently, productively and confidently than you ever expected.

Our proven OpenVMS™ software delivers unmatched levels of application availability, data integrity and system security in a client/server environment. With servers that provide tight integration with all desktops including DOS®, Windows®, Windows/NT®, OS/2®, MAC®, UNIX® and OpenVMS. Plus data integration with the databases or PCLANs of your choice.

What's more, you have a range of advanced features that ensure your data is always available, accurate and secure. They even protect against disasters by providing Failover protection over complete networks in only seconds.

Best of all, with our Alpha AXP 64-bit servers, you're running on the fastest, most cost-effective servers available. These servers beat anything else out there on performance, price/performance and scalability. Not to mention that Alpha AXP gives you the flexibility to support multiple operating systems such as OpenVMS, Windows/NT and UNIX from Digital and other companies.

And of course, you'll have the added protection of the service and support only Digital can deliver, in over 100 countries.

To learn more, please call 1-800-DIGITAL.

T o W o r k

digital™

How To Fortify Against Backup Disasters And Other Systems Management Deficiencies.

Now there's a way to eliminate the burden of systems administration. And to protect against security lapses, corrupted or lost data systems failures and backup disasters.

It's CA-UNICENTER®, the industry's most comprehensive systems software from the leading systems software company.

Thanks to the graphical user interface, you have the ability to see everything that's going on with your end users – right from your desktop.



And CA-UNICENTER gives you absolute control over absolutely everything: security, archival and restore, performance monitoring, workload balancing, problem and change management, charge back – you name it.



Best of all, since CA-UNICENTER supports a broad range of platforms – from UNIX to OS/2 to Windows NT – you can continue to leverage your existing hardware and software investments.

You also have the comfort of knowing it's backed by CA, which

for the last 20 years has had a solid record of service and support.

So why take chances? Play it safe with CA-UNICENTER.



Resource Accounting



Console Management



Problem Management

For Information On
Free Seminars And A Demo Disk
Call 1-800-225-5224, Dept. 10101.

Learn how CA-UNICENTER can take the risk out of systems management.

And why you shouldn't be running your systems – or your business – without it. Call us today.



COMPUTER ASSOCIATES
Software superior by design.

CA-UNICENTER®

UNIX NETWORK OS/2 MVS VSE NT VMS

© Computer Associates International, Inc., Islandia, NY 11788 - 7000.
All product names referenced herein are trademarks of their respective companies.

CIO

VOLUME 7, NUMBER 11



Best practices 46
Cover photo by
Kent Hanson

COVER STORY

REENGINEERING

46

A Process-Change All-Star Team

When Tambrands Inc. embarked on a global reengineering initiative, it benchmarked internally to identify the best practitioners for each targeted process. These leading lights then reinvented their respective centers of excellence globally.

By Leigh Buchanan

ESPRIT
Awards
application
follows Page 20

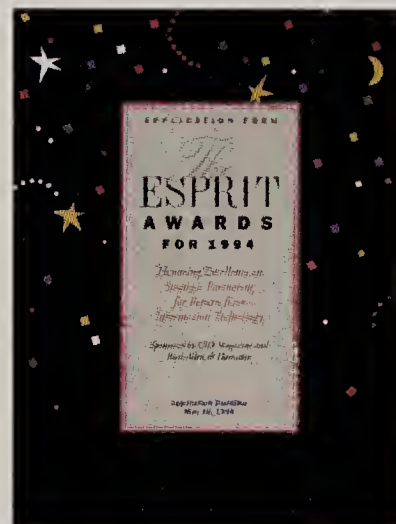
FEATURES

JOINT VENTURES

30

Finding Your Better Half

Companies enter joint marketing agreements to obtain something they lack on their own. Synon, a maker of CASE tools, and Hewlett-Packard have joined forces to create a product that will let developers run AS/400 applications on HP 9000 systems without change or additional programming. By Carol Hildebrand



DATA ANALYSIS

54

Reading the IT Leaves

Businesspeople are clamoring for tools to help them interpret sales and market data. Many IS shops are stumped by how to fill those requests. Some observers say that's because IS is stuck within a transaction-processing framework, and online analysis processing (OLAP) is a new kind of problem, requiring different technology approaches.

By Mickey Williamson

REENGINEERING

62

Financial Affairs

Creaky old financial systems and badly organized accounting processes are taking their toll on managers' decision-making powers. Companies' efforts to reengineer the financial function are elevating it to new prominence.

By Carol Hildebrand

Teaming
up 30

MORE ►►►

Operating Expense

Operating Income

Operating Assets

Cash

Inventories

Receivables

433,9

97,0

69

26

**Return on
Investment**

Here's the bottom line on Unisys services. Your bottom line.

The bottom line for any customer is—the bottom line. So it shouldn't be surprising that Unisys Services focus on exactly that.

What's surprising is how few other services providers do the same. After all, there's only one reason a customer invests in technology. Only one reason to call on a services provider. Real-world results.

To achieve these results, you need a partner who not only understands technology, but who also understands your business. Building on decades of experience serving the banking, airline, telecommunications and public sectors, Unisys is committed to a bottom-line test, a test that separates the services providers

of the '90s from the services pretenders of the '90s: *unless an information systems plan is designed to serve the customer's business plan, it amounts to little more than technology for its own sake.* Supplying technology is not the object. Applying technology is.

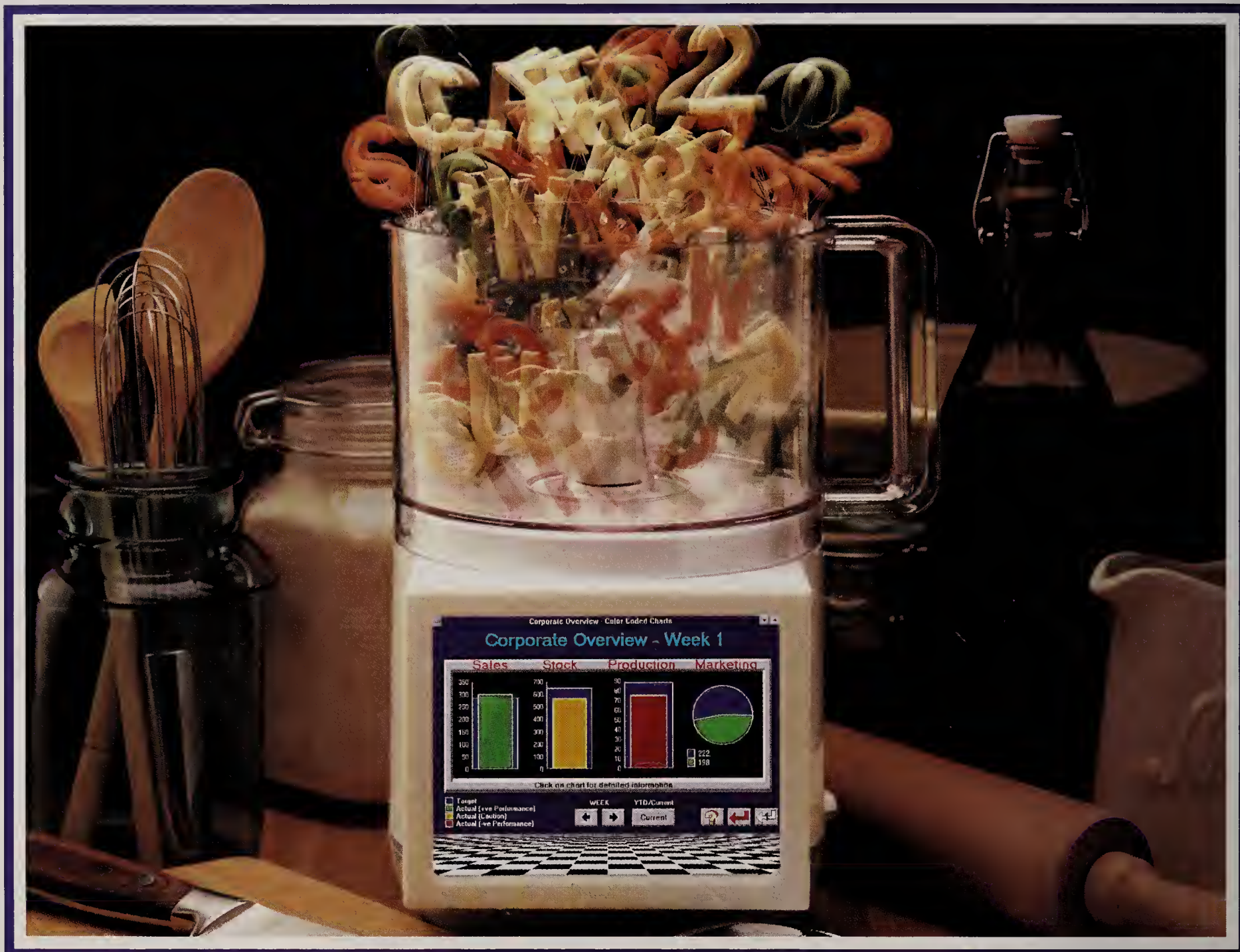
And in applying technology, it's essential to help you wring full value from your investment. That's why, in today's multi-vendor computing environment, our systems integration services make an organization's many systems work cost-effectively

together. It's why our consulting services harness technology to business goals, and not the other way around. It's why our application development process helps identify the desired cost-saving and revenue-generating results before we design the applications on which those results will depend. It's why our education services teach customers how to optimize the relationship between people and technology. And it's why Unisys outsourcing enables customers to lower costs and sharpen competitiveness.

Call us at 1-800-874-8647, ext. 187. Ask how Unisys Services can help your business. It's our bottom line.

UNISYS
We make it happen.

Slice, Dice Or Drill.



FOCUS/EIS For Windows Transforms Your Data Into The Information You Need.

As a corporate decision maker, you need to access information to identify business trends, pinpoint problems, and make intelligent decisions quickly.

When you want a sales or financial report, you don't care what computer it's coming from. You just want that report to appear on your PC in a form that's easy to understand... and easy to manipulate.

INTRODUCING THE ULTIMATE TOOL FOR FASTER, SMARTER DECISIONS

Imagine a simple to use, graphical reporting tool that reaches any data in your enterprise, in any file, on any platform. Imagine if that same tool could slice, dice

and analyze this data anyway you wanted... present it to you in real time and display it on your PC in a graphical format letting you pinpoint critical trends in a matter of seconds. Stop imagining and start enjoying the power of FOCUS/EIS for Windows.

NO MATTER HOW YOU SLICE IT, WE'RE ABOVE THE COMPETITION

FOCUS/EIS for Windows combines the most powerful reporting tools with full-feature EIS graphical display. Any element on the screen can become a gateway for drill down to more detail. And these "hot spots" are driven by live data.

Built-in interfaces let you report off of

SQL Server, Oracle, ODBC, DB2/2 and other popular PC servers. And FOCUS/EIS is EDA/SQL enabled, providing you with access to more than 55 databases... both relational and nonrelational, resident on over 35 types of computer systems.

No matter how you slice it, no other business information system can offer you a more powerful combination of graphical data display, information analysis, reporting, and enterprise-wide data access. For more information or to attend a FREE Seminar...

CALL 800-969-INFO

In Canada call 416-364-2760

Information Builders



Sizing to fit
24

COLUMNS

RIGHTSIZING

24

INSIGHTS: THE RIGHT FIT

No one platform is best for all applications. Finding the right one depends on your organizational objectives.

By Jay Goldberg

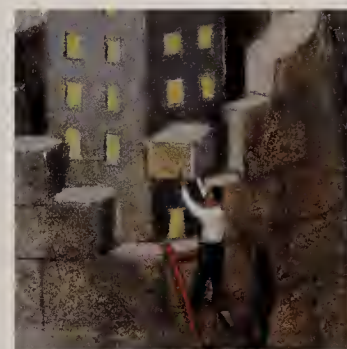
DISASTER RECOVERY

68

STATE OF THE ART: BE PREPARED

The question isn't whether your company is likely to be hit by a disaster, but what you stand to lose when it happens. The answer—profits, opportunities and customers—should send CIOs scurrying to draw up recovery plans.

By John Edwards



Dealing with disaster 68

MOBILE COMPUTING

74

FRONTLINE: ON THE ROAD

Taking your data with you when you travel isn't as simple as it used to be. But a few new options have emerged to make the task a little easier.

By Portia Isaacson



Ways to go 74

CUSTOMER SERVICE

80

WORKING SMART: PREMIUM SERVICE

Churchill Insurance's decision to emphasize fast over face-to-face service has driven the young company into the industry's leading ranks.

By Anne Stuart

DEPARTMENTS

Editor's Letter 8

Publisher's Letter 10

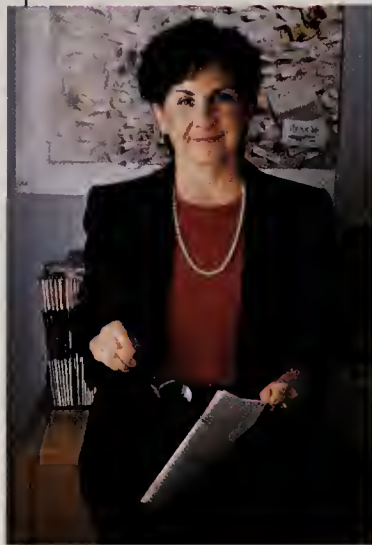
Trendlines 14

- Off the shelf
- Corporate videos
- IT performance
- Lumber scan
- A portable MBA
- Smart cars
- Decentralized IS
- Predicting verdicts

Index 78



Judicial system
14



One of the major themes resounding throughout this issue of *CIO* is the recognition that information plays a vital role in decision making throughout the organization. Increasingly being delivered in the client/server mode, information is the lifeblood and the pulse of all sectors of the organization, be they finance or marketing, located in New York City or the Ukraine. The information imperative is important enough to make executives abandon turf wars and cross-pollinate the enterprise's functional sectors. But the process isn't easy, and CIOs are redefining their roles as aerialists balancing on the high wire of the organization's various constituencies.

Senior Editor Leigh Buchanan reports that at Tambrands, Vice President of IT Diane Forrest is charged with creating an information infrastructure that can deliver an agreed-upon level of functionality. In the past few years Tambrands has concentrated on putting together teams formed from its many worldwide operations to identify and implement best business practices. This, in turn, has helped build an integrated global enterprise from what was once a collection of nationally centered groups. (Please see "A Process-Change All-Star Team," beginning on Page 46.)

Not surprisingly, reengineering the financial function is a critical link in making the necessary information flow seamlessly within an organization's borders. Both the Gartner Group and Forrester Research conclude that CIOs identify reengineering the finance function as a top priority. And no wonder: Finance was one of the first departments to be automated, and those systems are often overripe.

In our article "Financial Affairs," beginning on Page 62, Senior Writer Carol Hildebrand reports that managers throughout the enterprise need financial information to make business decisions. This means the financial executive needs to think like a cross-functional strategist and recognize that financial information often needs to be restructured to be of value to managers.

Our profile of Tambrands spends a good deal of time delineating the importance of reengineering the finance function. We also look at how Reebok International, Boulevard Bancorp and Russell Reynolds Associates are handling that imperative.

Effective CIOs know that reengineering requires finesse; they must develop the skills to help corporate executives recognize the importance of cross-fertilization.

Marcia Blumenthal



© By CIO Publishing Inc.

Publisher/Editorial Director JOSEPH L. LEVY

Editor in Chief MARCIA BLUMENTHAL

Managing Editor LEW MCCREARY

Art and Design Director MARY LESTER MARSHALL

Associate Managing Editor ABBIE LUNDBERG

Senior Editor THOMAS KIELY

Senior Editor LEIGH BUCHANAN

Associate Editor KATHERINE A. AUER

Senior Writer RICHARD PASTORE

Senior Writer CAROL HILDEBRAND

Senior Writer ANNE STUART

Staff Writer MEGAN SANTOSUS

Staff Writer NANCY HITCHCOCK

Copy Editor CHERYL R. DAVIS

Assistant Art Director MOIRA GILLIS

Design Associate KIM MORNEAU

Design Associate KELLI WALTON

Editorial Assistant BROOKE R. BURTON

Director of Marketing CATHY O'LEARY HAYES

Production Director LORI BETH SADEWITZ

Director of Finance & Admin. WALTER MANNINEN

Assistant to the Publisher DIANE MARTIN

Circulation Director CAROL A. SPACH

Fulfillment Manager SUSAN WOODWORTH

Senior Promotions Specialist MARCY L. DILL

Sales & Marketing Specialist BRIDGET CAMMARATA

Sales & Marketing Assistant DOT CASPERSEN

Circulation Assistant DENISE PERREAULT

Administrative Assistant LYNN J. PALMQUIST

Systems Specialist MICHAEL DI PALMA

VP/GM, Exec. Programs LYNDA ROSENTHAL

Director, Exec. Programs DEBORAH HALON

Manager, Program Services ELIZABETH L. LADENDECKER

Administrator, Exec. Programs CHRISTINE MCCARRON

Ancillary Products Specialist BILL KERBER

Contributing Writers John Edwards, Jay Goldberg, Portia Isaacson, Mickey Williamson

Editorial Offices CIO Publishing Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, Mass. 01701-9208 (508) 872-8200, FAX (508) 879-7784. Printed in the U.S.A.

Subscriber Services (800) 788-4605, FAX (508) 872-0618.

List Services (800) 859-LIST



Board Chairman PATRICK J. MCGOVERN

President WALTER BOYD

Executive Vice President WILLIAM P. MURPHY





**ARE THE FORCES
OF TECHNOLOGY
MAKING YOUR
COMPANY MORE
VULNERABLE
TO THE FORCES
OF DISASTER?**

Comdisco keeps
you protected with
innovative business
continuity solutions
that reduce technology
cost and risk.

Your company is becoming more and more dependent on technology. And the more dependent you are, the more you need to guard against costly loss of business and revenue in case of interruption or disaster. As the world's largest and most experienced provider of business continuity solutions, and the largest independent lessor and remarketer of high-tech equipment, Comdisco is now in our 25th year of helping Fortune 1000 companies secure their competitive edge.

FOR A FREE INFORMATION PACKET CALL 1-800-321-1111, EXT. 5256.

SOLUTIONS FOR REDUCING TECHNOLOGY COST AND RISK.



Our "behind the scenes" profile of the events leading up to Hewlett-Packard's strategic marketing agreement with Synon Inc. (see Page 30) provides invaluable insight into the dynamics of successfully negotiating a joint marketing pact. The steps these companies took and the guidelines they followed can be applied to just about any kind of contract negotiation you may be involved in.

While the product resulting from this alliance is just coming to market, its prospects for success seem high because HP and Synon did their homework. They identified their own strengths and weaknesses, shared a vision of what they wanted to accomplish, solicited input from and built consensus among prospective customers, and carefully crafted an agreement that identifies who is responsible for what and when.

To me, the key ingredient of the HP/Synon negotiation process was timely and open communication. "Champions" from each company were careful to test their ideas and communicate with key internal departments and with customers throughout the process to ensure the proposed joint venture made sense.

Early and continuing communication of the customer benefits is now critical to creating awareness, building momentum for product sales and underscoring the success of this particular strategic alliance.

We'll be watching for the fruits of HP and Synon's efforts later this year!

Wayne L. Woz

P.S. It's not too early to mark your calendar for the next CIO Perspectives conference, "IT Economics: Business Value & Profit Maximization," to be held Oct. 23-26 at La Paloma in Tucson, Ariz. For more information, call us toll-free at 800 366-0246.

Coming In CIO

Out of Africa

In Gabon, the steamy equatorial heat will make computers wig out in ways unimaginable to technicians from the developed world. Power supply and communications links are unreliable at best, and most technicians lack the know-how to trouble-shoot or customize systems. By offering partnership and technology transfer, U.S. systems integrator Synetics Inc. won a contract to develop and install a state-of-the-art port system in this West African country. In the first of a two-part series, *CIO* examines the progress of this uniquely African solution.

Wired Up

What do you get when you cross a telephone company with a cable-television system? Sorry, but you'll have to wait until things settle down a bit to find out. Change in the telecommunications industry is happening so fast that what seemed improbable two weeks ago will probably be announced tomorrow. *CIO* takes a look at the implications for information executives.

Salient Points Of Sale

According to many observers, the point of sale will no longer be the place where raw value is transferred. Rather, it is becoming the nexus of the enterprise. POS technologies now contribute directly to every segment of business management—from marketing to inventory control and even personnel control.

DEAR MR. PRESIDENT:

According to the Gartner Group, "Over half of all client/server projects fail, and 90% of them because the right systems management structure was not in place." Send your CIO to one of our free seminars and spare yourself ... the blues.

Talk about a *clear and present danger!* It's taken a generation to develop reliable main-frame systems management technology. And now everybody wants you to massively downsize and distribute client/ server systems world-wide.

Sir, we can help you. We're 4th Dimension Software, the emerging leader in enterprise operations automation. In 1993, we delivered the first elements of our new Enterprise Control Architecture.[™] The Enterprise ControlStation[™] and MultiPlatform CONTROL-M[®] allow you to schedule jobs and tasks on any number of MVS, VAX/VMS, UNIX and AS/400 systems — from a single RS/6000 or SPARCstation. But that's only the beginning. We'll soon add up to 40 plat-

forms that will allow a single person to control all aspects of enterprise operations from a single graphical workstation — all without specific training on the platforms being controlled.

Please call today, to reserve your CIO's seat for the next seminar in your area. We'll show him or her how to meet the challenges of distributed systems management — so client/server technology can be music to your ears.

And, if you're actually *The President* ... well ... we'd be delighted to bring the seminar to you. We'll even bring our instruments. But you'd better have you-know-who make that call today. So you won't be playing the blues tomorrow.

RSVP BY CALLING
800-347-4694
EXT. 2803
(OR 714-757-4300
FROM OUTSIDE THE US)

4D

4th DIMENSION SOFTWARE INC.

THE EMERGING LEADER
IN ENTERPRISE OPERATIONS AUTOMATION

HOW TO DOWNSIZE WITHOUT GETTING THE BLUES SEMINAR

CITIES & DATES

Albany, NY.....	Mor 24
Atlanta, GA.....	Feb 3
Baltimore, MD.....	Mar 1
Birmingham, AL.....	Apr 7
Boston, MA.....	Feb 22
Calgary, AB.....	Mar 8
Charlotte, NC.....	Mar 30
Cincinnati, OH.....	Mor 8
Cleveland, OH.....	Mar 23
Columbus, OH.....	Mor 16
Dallas, TX.....	Feb 16
Denver, CO.....	Mor 22
Des Moines, IA.....	Apr 28
Detroit, MI.....	Mor 30
Ft. Lauderdale, FL.....	Apr 28
Garden City, NY.....	Mar 3
Greenville, SC.....	Mor 23
Harrisburg, PA.....	Apr 19
Hartford, CT.....	Apr 26
Honolulu, HI.....	Mar 22
Houston, TX.....	Mor 10
Indianapolis, IN.....	Apr 13
Jacksonville, FL.....	Apr 19
Kansas City, MO.....	Apr 6
Little Rock, AR.....	Mar 29
London, ONT.....	Apr 14
Los Angeles, CA.....	Mar 31
Memphis, TN.....	Apr 27
Milwaukee, WI.....	Apr 20
Minneapolis, MN.....	Feb 17
Montgomery, AL.....	Apr 21
Montreal, PQ.....	Mar 16
Nashville, TN.....	Mor 15
New Orleans, LA.....	Feb 24
New York, NY.....	Feb 15
Orange County, CA.....	Apr 12
Ottawa, ON.....	Feb 23
Philadelphia, PA.....	Mor 10
Phoenix, AZ.....	Apr 12
Pittsburgh, PA.....	Mar 31
Portland, OR.....	Mar 24
Quebec City, PQ.....	Mor 29
Raleigh, NC.....	Feb 22
Regina, SK.....	Apr 6
Richmond, VA.....	Mor 1
Rochester, NY.....	Apr 7
Rosemont, IL.....	Feb 3
Salt Lake City, UT.....	Mor 9
San Antonio, TX.....	Feb 2
San Diego, CA.....	Apr 13
San Francisco, CA.....	Apr 5
Seattle, WA.....	Feb 17
Somerset, NJ.....	Mor 15
St. Louis, MO.....	Apr 14
Toronto, ONT.....	Feb 16
Tulsa, OK.....	Apr 5
Tysons Corner, VA.....	Mar 9
Universal City, CA.....	Feb 2
Washington, DC.....	Feb 15
White Plains, NY.....	Apr 20

Tear down

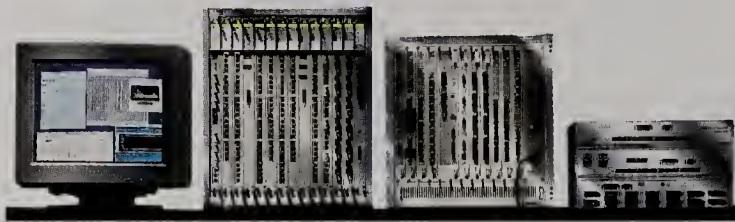
It's time to bring your IBM™/SNA and LAN environments together.

The barriers have come down. Now combining an IBM/SNA environment with a LAN environment is easier than ever.

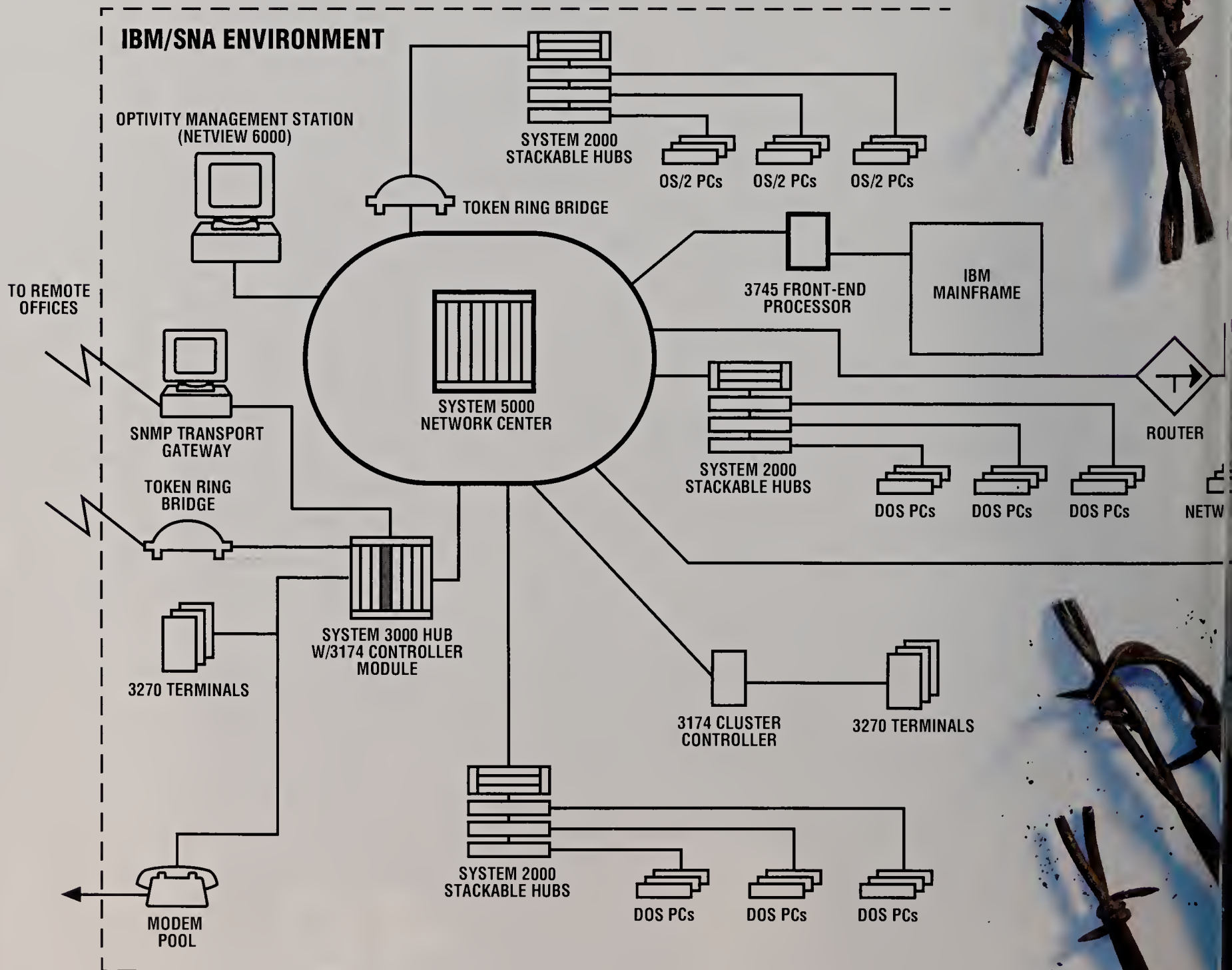
The new SynOptics™ LattisSphere™ system provides the foundation you need for bringing your distributed LANs into your IBM environment. You'll still be protecting your

IBM investment—in equipment and staff training—while maintaining control of your evolving network.

Our relationship with IBM dates back to our joint development of the first 16 Mb/s UTP Token Ring. We've also worked



The LattisSphere system provides a complete solution for bringing distributed LANs into an IBM/SNA environment.



Cut me in.

Send more information on your intelligent hubs.

To receive our "Blueprint for Structured Networking" planning kit, which includes a free demo disk, video tape and informative brochure, just complete this card and drop it in the mail. You'll have all the information you need to bring your SNA and LAN environments together.

Name _____

Title _____

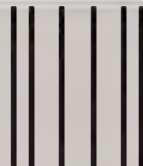
Company _____

Address _____

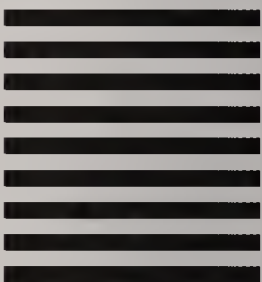
City/State/Zip _____ Telephone _____

 **SynOptics**

MA9403A-CIO



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 150 JACKSONVILLE, FL

POSTAGE WILL BE PAID BY ADDRESSEE



SynOptics Communications, Inc.
P.O. Box 45018
Jacksonville, FL 32232-9968



the fences.

with IBM to integrate our Optivity™ network management software into the IBM NetView®/6000 platform. IBM even builds the 3174 cluster controller module integrated into our wiring closet hubs. It's no wonder our Token Ring products blend seamlessly into your legacy environment to create one cohesive system.

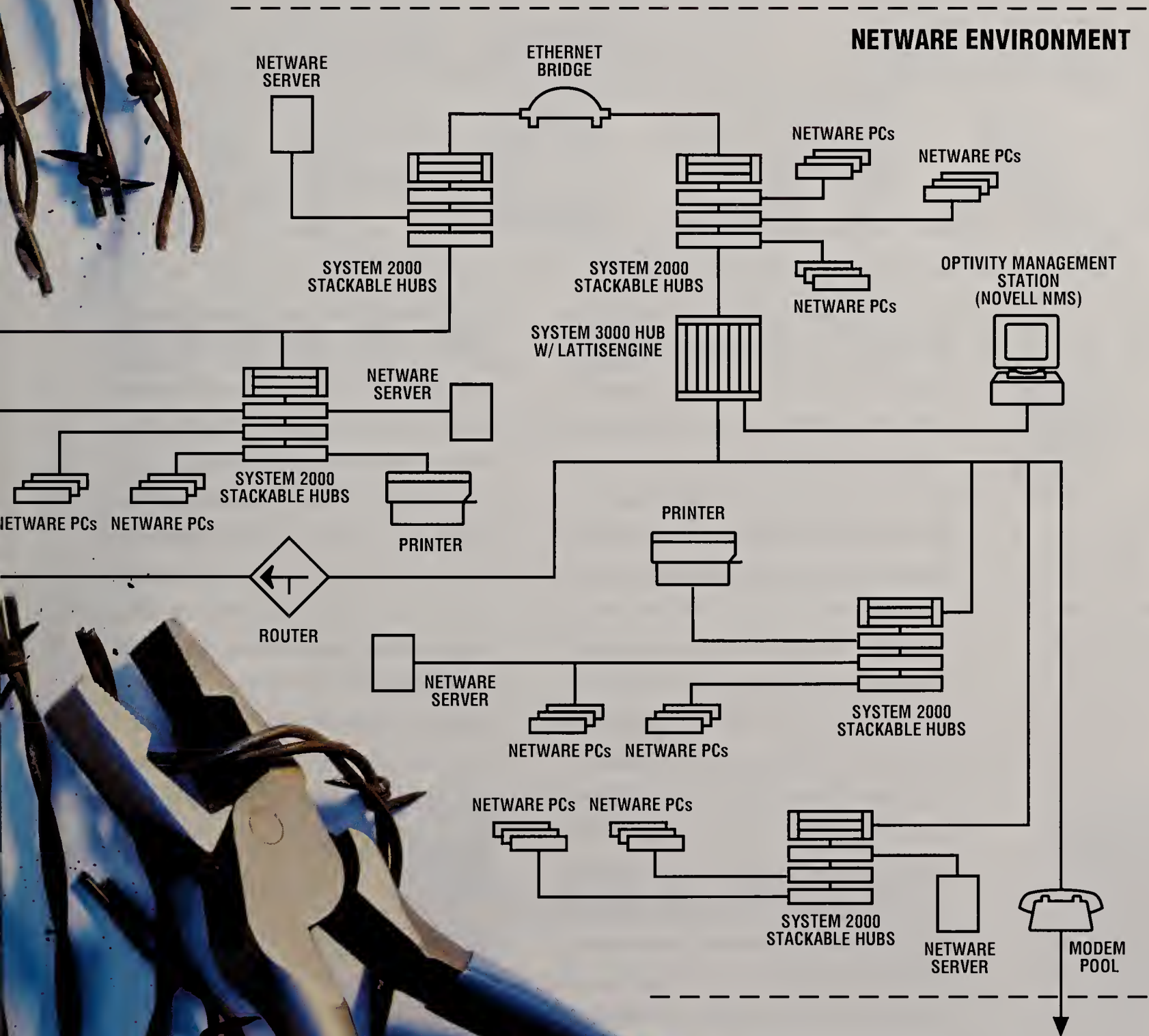
As the world's leading supplier of hub-based networking systems, we have solutions for branch offices, departmental LANs and more complex enterprise networks. So inte-

grating distributed LAN resources can be as fast or as slow as you like.

To receive our "Blueprint for Structured Networking" planning kit, call 1-800-PRO-NTWK, ext. 31. Because if you want to integrate LANs and IBM/SNA, but have been sitting on the fence, now is the perfect time to act.

SynOptics

The Network Fabric of Computing



TRENDLINES

CORPORATE COMMUNICATIONS

LET'S GO TO THE VIDEOTAPE

Corporations nationwide are turning out videos intended to wake up old audiences or lure new ones.

Analysts say short videotapes are just the ticket for reaching busy TV-generation decision-makers overwhelmed by junk mail, faxes, brochures and reports. While paper correspondence often ends up unopened in the trash, studies show people rarely discard a video without viewing it first, says Richard Kelly, president of Cambridge Associates, a Stamford, Conn., management-consulting firm. And VCRs—virtually ubiquitous in American households—can be found in at least 80 percent of businesses as well, according to industry analysts.

In many cases, executives take center stage to communicate with far-flung members of the corporate family, introduce the company to potential clients or promote products directly to the public. McDonald's Corp., for example, enlivened an annu-



al report with a 17-minute video supplement featuring company leaders discussing long-term global plans. (Listen "with a Big Mac in hand," CEO Michael Quinlan urges in his introduction.) Packaged with a paper financial summary, the video was sent to about 250,000 shareholders for roughly the same cost as a traditional four-color glossy report.

"It was a unique way to meet our strategic goals for the 1992 annual report, which were to put a

face on management and give shareholders an opportunity to see a strategic discussion," says Chuck Ebeling, director of corporate communications.

Other companies use videos in lieu of personal sales calls, giving them away at trade shows or mailing them to clients. Aslanis Seafoods Inc. sent copies of a 10-minute videotaped tour of its Quincy, Mass., processing plant to buyers throughout the Northeast, attracting two major accounts projected to bring in \$20 million annually

A CAR WITH WHEREWITHAL

With the exception of John Milton, most people wouldn't consider using the words "paradise" and "lost" in the same sentence. Driving fruitlessly over unfamiliar terrain in search of an elusive street name or seemingly nonexistent airport is one of the most frustrating things a traveler can experience.

But paradise has been temporarily regained by some customers of Avis Rent-A-Car in San Jose, Calif., which recently finished piloting a fleet of Oldsmobiles with a new navigation/information system. The system—which will be available to buyers of Oldsmobile's model Eighty Eight LSS later this year as a \$2,000 option—determines where the driver is trying to go and then provides maps and directions.

Before beginning a journey, the driver uses a menu screen to enter details about the destination: street address, road intersection or the name of a school or hospital, for example. The system then uses satellites and advanced dead-reckoning techniques to pinpoint the pre-

cise location. An onboard computer calculates the most-convenient route and displays it on a color LCD screen attached to the instrument panel, and a voice prompt alerts the driver when it's necessary to make a turn.

The system's database, which is still being developed, will cover the whole country by 1995 and will include such information as which streets are one-way and where left turns are illegal. Oldsmobile General Manager John Rock says the system's principal business market will probably be realtors, traveling salespeople and the tourist industry. ■



ILLUSTRATION BY BETHANY GULLY; PHOTO COURTESY OF OLDSMOBILE



THE #1 ENTERPRISE SOFTWARE IS NOW
O P E N

BPCS/AS

CLIENT/SERVER SOFTWARE IS NOW AVAILABLE ON
UNIX & AS/400

The door to global business productivity is now open. SSA is the key.

Today, there is an easy, reliable way to integrate every functional part of your business: engineering, manufacturing, sales, distribution and finance, even if your application software runs on diverse computer hardware platforms. It's called BPCS/AS, the open client/server software solution from SSA.

BPCS/AS optimizes your investment in technology. It helps you respond to customers, cut waste, improve processes and speed communication among all business locations, enterprise-wide. Simply stated,

BPCS/AS helps businesses remain competitive in today's global economy.

BPCS/AS is now available to Process, Discrete or Hybrid manufacturers running AS/400, RS/6000 and HP9000 systems in single or multi-plant environments.

Installed at more than 7,000 sites, BPCS/AS is backed by a global network of 5,000 professionals in 65 countries and a 24 hour-a-day International HelpLine. BPCS/AS works where and when you need it...on budget and on schedule.

Discover BPCS/AS. It is your key to enterprise-wide success.

CALL 1-800-SSA-BPCS
FOR YOUR FREE PREVIEW DISK OF BPCS/AS TODAY.

SSA SYSTEM SOFTWARE ASSOCIATES, INC.

500 W. Madison, Chicago, Illinois 60661 U.S.A. Telephone: 312-641-2900 Fax: 312-641-3737

© 1994 SYSTEM SOFTWARE ASSOCIATES, INC. BPCS/AS IS A TRADEMARK OF SSA. IBM, AS/400 AND RS/6000 ARE TRADEMARKS OF INTERNATIONAL BUSINESS MACHINES CORPORATION. UNIX IS A TRADEMARK OF UNIX SYSTEM LABORATORIES, INC. HP 9000 IS A TRADEMARK OF HEWLETT-PACKARD COMPANY.



TRENDLINES

in new sales.

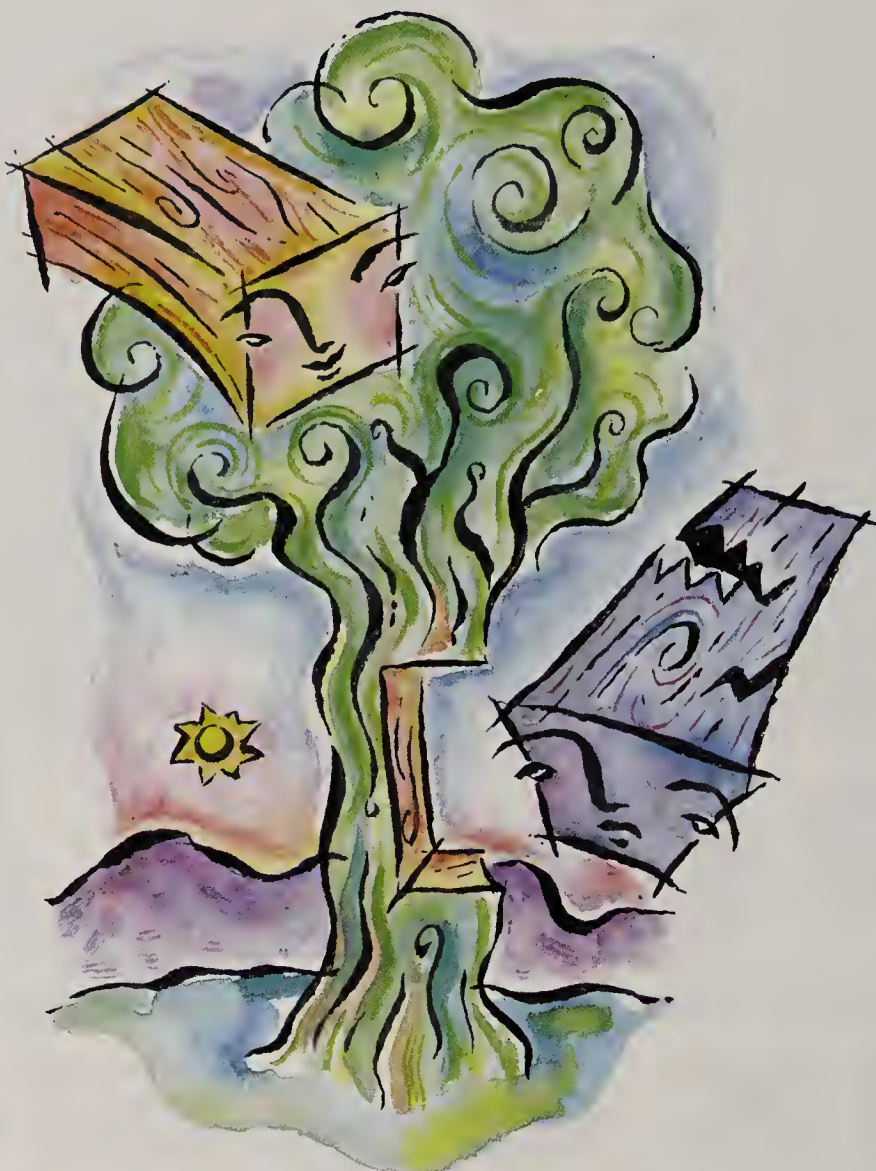
"It tells a story," says Frank Chandler of Info-Vision, the Boston-based production company that created the video for seafood company President Gus Aslanis. "It makes you feel like you've met him and been to his place."

Some industries target consumers who can pop in the cassettes at home. Colleges, camps, tourist destinations, hospitals, nursing homes and exercise-equipment manufacturers have used this approach. Chrysler Corp. sent out about 500,000 videos promoting its minivan and later extended the campaign to its other vehicles.

Bob's Stores Inc. of Meriden, Conn., used a video coupon to promote the opening of a suburban Boston store. The 16-store chain sent a tape highlighting its merchandise and competitive prices to nearby residents. Shoppers who returned the video to the store got \$10 in free merchandise.

Professional videos don't take a Hollywood budget. A 10-minute tape costs as little as \$15,000, says Paul Caravatt, president of the Special Interest Video Association, a Norwalk, Conn., trade group. But costs climb quickly if companies want longer programs, animation, fancy graphics, music, celebrity narrators or taping at multiple sites. For quality work, Caravatt says, expect to spend \$2,000 to \$3,000 per minute of finished video. Tapes can be duplicated and delivered for \$2 to \$5 apiece, depending on the number ordered.

"The whole thing in the mail is competitive to, if not cheaper than, print," Cambridge Associates' Kelly says. "The moving image is worth 20,000 printed pages." ■



NEW TEETH FOR AN OLD SAW

In their efforts to solve a knotty problem, two scientists from Virginia Polytechnic Institute in Blacksburg have developed a machine that could help keep more of our forests vertical.

The brainchild of Earl Kline and Richard Conners, the machine uses a high-resolution camera to scan raw lumber for defects. (Grading raw lumber is currently a manual process, says Virginia Tech spokesman David Nutter. Inspectors must make "a split-second decision on the quality of the wood.")

The scanned image is sent to a computer, which compares the color and grain with preprogrammed grading data. With the defects identified, the computer figures out the most-efficient way to process the board, down to telling the saw how to cut it to maximize the usable parts.

Nutter says that by midsummer, scientists will have added an X-ray scanner that should cut down further on waste by identifying internal defects such as honeycombs and inside knots. According to one study, the system can increase lumber yields by 10 percent and lumber value by 25 percent. ■

BUSINESS IS LOOKING UP

After browsing through *The Portable MBA Desk Reference* (John Wiley & Sons Inc., \$35), you may wonder whether the reputation of IS people for using an impenetrable lexicon ought to be more widely shared. True, there's a lot of excess technojargon bandwidth; but IS types hardly have a lock on jargonizing. What, for example, is a newsboy problem? ("A generic characterization of a class of problems dealing with overstocking or understocking a perishable product.")

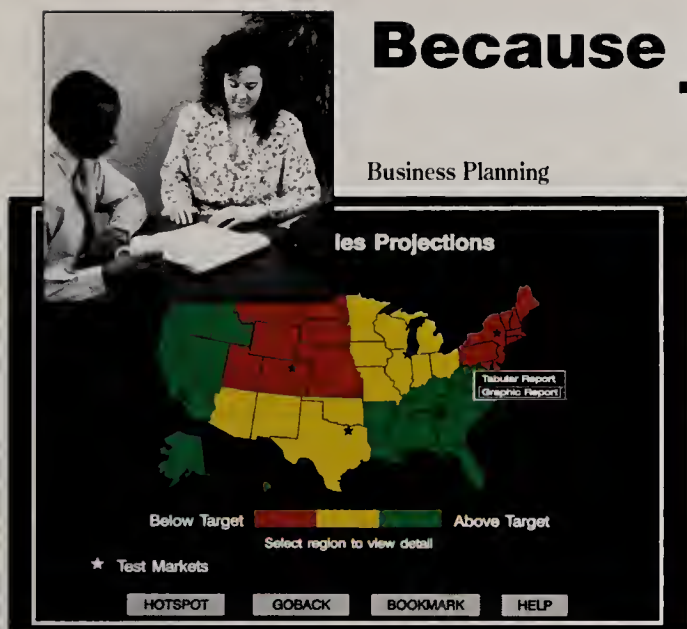
The rub is that the organizational value chain ("the collection of activities within a company that allow it to compete within an industry") tends to regard business-speak as businesslike and technobabble as... well, as babble.

But if they won't master your jargon, maybe you can master theirs. Edited by Paul A. Argenti, *The Portable MBA* includes concise definitions of standard business terms (absorption costing, zero coupon security), along with formulas for calculating, say, net present value (assuming you have any), economic order quantity or (hold onto your hats) double declining balance depreciation. Argenti also defines landmark business-relevant legislation and trade agreements (you've heard of NAFTA?). And the book includes an extensive directory of business-information sources and appendices.

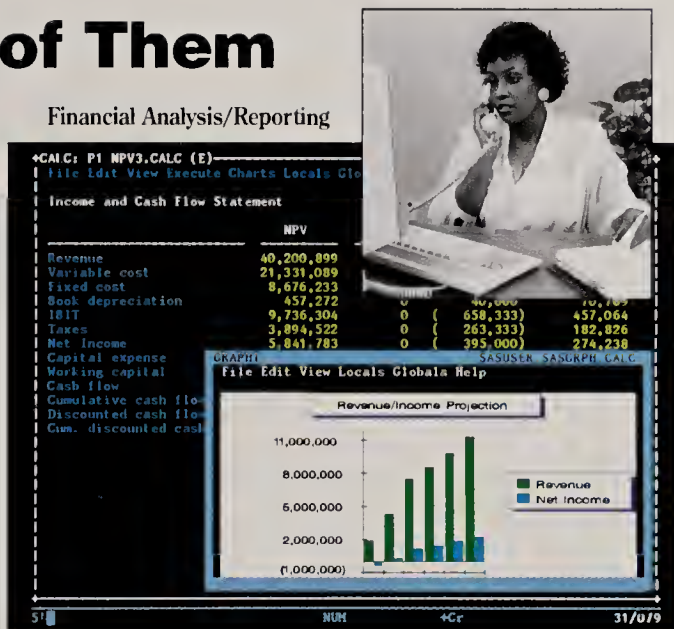
The big drawback of *The Portable MBA* is that it's not portable enough. At five to six pounds and with a footprint like that of the average notebook PC, it's too

**Because There Are More of Them
Than There Are
of You...**

Business Planning



Financial Analysis/Reporting



The SAS[®] System for Information Delivery

The CEO needs visual checks on all the factors critical to the success of the business. The CFO wants a "small" change in the financial reports. The marketing VP is anxiously awaiting pricing models. And they're *still* waiting for inventory and quality monitoring systems out on the factory floor. How can one IS manager—with so little time, so few resources, and so many budget constraints—meet the diverse needs of so many clients? The answer is the SAS System for Information Delivery.

Integrated Applications for Enterprise-Wide Productivity

Unlike stand-alone solutions—which drain your software budget and drive up training and support costs—the SAS System gives you a cohesive, enterprise-wide application strategy. One that fits the needs of the executive suite, the manufacturing floor, and everywhere in between. One that supports cooperative processing across hardware platforms. And one that responds immediately to new or shifting applications demands. Virtually any application that involves accessing, managing, analyzing, and presenting data is available within the SAS System's information delivery environment.

Call Today for a Free Video Preview of the World's Leading Information Delivery System.

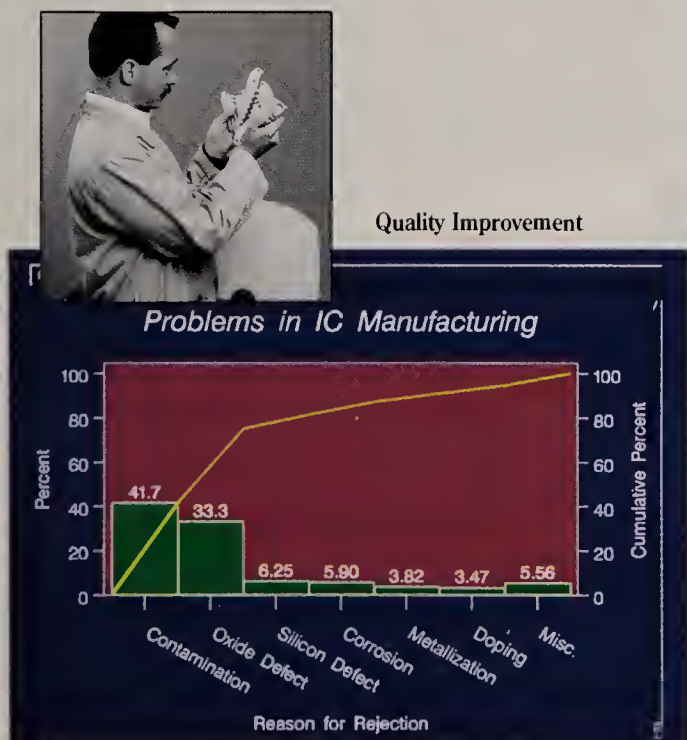
See for yourself why the SAS System is the only software you'll ever need. Give us a call at 919-677-8200 for your free video preview. Also ask for details about the free SAS System Executive Briefing...coming soon in your area.



SAS Institute Inc.
Software Sales Division
SAS Campus Drive □ Cary, NC 27513
Phone 919-677-8200 □ Fax 919-677-8123

SAS is a registered trademark of SAS Institute Inc. Copyright © 1992 by SAS Institute Inc. Printed in the USA.

Quality Improvement



Data Visualization



TRENDLINES

obtrusive for a surreptitious look-up when the director of marketing starts discussing spending multipliers and all you can think of are your four teenage offspring. ■

I.T. PERFORMANCE

A MIXED MESSAGE

There was plenty to cheer about in a report on executive perceptions of information technology released earlier this year by Nolan, Norton & Co., of Boston. But the message that CEOs finally recognize the bottom-line value of IT doesn't automatically translate into unconditional support for the CIO, according to John Halloran, managing partner of the firm's U.S. operations.

Of the 100 CEOs, CFOs and COOs surveyed, 65 percent said they receive most or all of the benefits they expect from IT. But Halloran points out "an apparent dichotomy between their level of satisfaction with the benefits... from information technology versus how they view the management of that asset within their organizations." He notes that close to 70 percent of respondents saw a "strong need" or "some need" for better IT management.

"If you put a bullseye on the back of the CIO and ask hard questions—Is this guy managing the organization as effectively as he could? Is he in tune with the business priorities of the organization? Is he viewed as a member of the executive management team?—you may come

away with a different impression of how the IT component of the business is viewed," he says.

Still, the news was generally good for CIOs, particularly those worried about their budgets. A third of the executives said they would

need to increase technology spending to maintain their companies' competitive edge, while only 7 percent called for cuts. Halloran attributes this willingness to invest to the fact that executives are finally seeing the payoff from IT projects initi-

ated in the 1980s. "A lot of the CIO-bashing that was going on in the late 1980s was the result of that 'where is it now?' view from the executive suite. Finally it's starting to dawn on them, 'Oh, now I see! This is like the rest of our busi-

THE DRAWBACKS OF STAYING CENTERED

Decentralized IS is key to exploiting technology resources, according to a Forrester Research Inc. survey of Fortune 1000 companies. The study shows that 88 percent of CIOs and 79 percent of their business counterparts believe that IS is more effective when it operates where the action is.

"With IT closer to where the money is made, business executives have more input when it comes to making technology decisions," says Susan Cohen, senior analyst of computing strategy research at the Cambridge, Mass.-based company. "Old, centralized MIS habits hobble the thinking of business executives and IS professionals alike."

To avoid getting trapped in old ways of working, Cohen says, companies must learn to inculcate emerging technologies into business-unit strategic planning and dynamically reallocate IS resources. She also criticizes ROI metrics used to calculate the business value of IT. "Com-

panies must stop wasting time trying to compute the return on technology—it cannot be done," she says. "Information technology is an enabler, not a discrete wealth-producing investment in its own right."

Instead, the report suggests, companies should use a "partnership scorecard," a series of discrete metrics tailored to each business-change effort. Such a scorecard would assess team performance in the context of business changes enabled and would be shared by all members. ■

HOW DO YOU KNOW DECENTRALIZED I.S. PROVIDES BUSINESS VALUE?

Business Executives say:

(% of 15 interviews)

"I know more about what IS is doing."	47%
"I get to set my own priorities."	41%
"There is a better alignment between business and IS now."	41%
"I'm more personally effective."	29%

IS Professionals say:

(% of 18 interviews)

"Users tell us they like our systems."	39%
"There is a better alignment between business and IS now."	33%
"Users know more about what IS is doing."	28%
"There is a higher quality of data and reports."	22%

Source: Forrester Research, Inc.

Who says distributed environments are unpredictable?



HP's performance management tools show you the future in time to change it.

Today, the way to manage your systems can be crystal clear. Thanks to the vision provided by our performance and resource management tools. Giving you the kind of control previously available only in mainframe environments.

Our robust family of products provides everything from top-down enterprise overviews using HP PerfView to nitty-gritty system diagnostics with

HP GlancePlus. To plan and manage your resources, we offer HP PerfRX and HP Performance Collection Software.

Working together, they help you increase user productivity and maximize system utilization. While reducing management costs. You'll be able to see problems in time to avoid them. Even future needs become predictable.

HP has long played a prominent role in Open Systems management. With HP OpenView, we showed the way to manage integrated networks. So it's no

wonder we're the leader in tools for the distributed computing environment.

To see more, call 1-800-237-3990, Ext. 2825 for our free video. The future will look much brighter when you look at it with us. **The performance management leader for the distributed age.**





Fred was great.
Ginger was great.
Together they
were spectacular.

The partnership makes it work!

Fred Astaire certainly held his own. But when he paired up with Ginger Rogers, it was pure magic. The same holds true in business. When two diverse business departments forge alliances, the results are often nothing less than brilliant.

That's the idea behind the ESPRIT (*Excellence in Strategic Partnering for Return from Information Technology*) Awards Program. The ESPRIT Awards recognize the strategic partnership between IS management and business management as they apply IT to improve business value and increase profits. Since its inception in 1993, this program has recognized a select group of companies, government agencies and nonprofit organizations that are using IT to attain real business value in measurable ways.

If you can demonstrate the strategic value and increased bottom-line profits as a result of a technology investment, we want to hear about it. We urge you to participate by filling out the ESPRIT Awards application form bound in this issue of *CIO*. If the entry form has been removed, please call Brooke Burton at (508) 935-4449.

ESPRIT Awards sponsored by

CIO

THE MAGAZINE FOR INFORMATION EXECUTIVES

and

BOOZ·ALLEN & HAMILTON



Data General: Open, for Business



Making the transition from a closed, single-vendor proprietary IS environment to an open systems environment has been compared by some IS professionals to replacing a faltering jet engine in mid-flight. It can be hair-raising, but you may not have much choice. Fortunately, the results generally justify the effort. Data General Corporation, having made the transition itself from supplier of proprietary systems

to an open systems provider, knows from experience how difficult the process can be for its customers. For both Data General and its customers, however, the results have been rewarding.

The evolution to open systems has been under way now for some 10 years. Few IS professionals dispute that the heyday of closed single-vendor proprietary technology is over and that the era of open, multivendor systems has arrived. Merely acknowledging the sea change that is taking place, however, does not assure a successful transition. Open systems implementation can

constitute the most critical challenge of even the most respected IS professional's career.

The challenge has been intensified by two factors: First, commodity economics have caused the real cost of computing to plummet. Second, businesses have been forced to compete in the global marketplace. In the face of these pressures, the move to open systems has become a strategic necessity. This is as true for the information systems user as for the IS vendor. Both need to maintain the functionality and integrity of current operations while investing the resources required to seize the open systems opportunity.

Data General Corporation faced up to the future in 1988. The company had built its reputation with a family of computer systems based on a superior, proprietary technology. "But we saw an inevitable and growing advantage for commodity-based technology and open systems," says President and Chief Executive Officer Ronald L. Skates. "To take advantage of it, we really had to reinvent the company."

DG had gained experience in developing mid-range proprietary systems featuring multi-processor support and high availability. The company's technology managers were convinced these valuable features could be incorporated into RISC-based, open systems servers that would satisfy the commodity economics equation. In addition, they believed—although many disagreed with them—that the Unix operating system could satisfy the demands of large-scale, mission-critical enterprise applications.

At DG, as at many companies, identifying the shift toward open systems was relatively straightforward. Accomplishing the transition pragmatically was another matter altogether. The "jetliner," after all, was in full flight.

"From the business perspective," recalls Ron Skates, "we had to stand by our commitment to our MV product line (the Eclipse minicomputer), and even increase its allocation of resources to serve our installed base." Data General has done this by significantly expanding the MV line's performance range and continuing to enhance its software and support for its customer base of 50,000 systems.

"At the same time, we had to invest in our new Aviion open systems line," Skates adds. Harvard-educated and a former senior partner at Price Waterhouse, Skates knew that the open systems vision, when realized, would bring lower system prices, increased competition, reduced vendor margins and, ultimately, an entirely different cost model for companies such as Data General. "And that meant that we

had to pursue a third activity—taking costs out."

In 1988, a new model for complex organizations called the "open enterprise" was just coming into focus. It was predicated on new methods for selecting and implementing information technology. This new model called for a move away from mainframe-based applications, which are expensive to both build and maintain, in favor of server-based applications. As a result, hardware costs could be dramatically reduced.

Perhaps the most significant characteristic of the open enterprise model was that technology strategy would be developed in the light of business objectives. Software tools and hardware platforms would be chosen to satisfy specific business goals and requirements, even if it dictated multivendor solutions and technologies. "The safe choice had always been to go with a single, big vendor," observes Tom West, Data General's senior vice president for Advanced Systems Development. "But if you believe the industry is moving to a volume game, you're going to seek the lowest price. You'll find that low price wherever there is competition. Now, instead of buying mediocre technology from one provider, you can choose best-of-breed technology from whomever offers it."

Data General moved swiftly to serve this emerging open enterprise. Early in 1989, DG announced the Aviion server line, predicated on a System V-compliant Unix variant, DG/UX, designed from the beginning as a commercial operating system. Aviion was later complemented by a fault-tolerant, RAID-type open systems data storage line called Clariion.

DG's open systems vision has proven to be accurate. But Ron Skates and his senior management team, which includes talent newly recruited from such companies as Digital, Sequent, Storage Technology and Integris, continue to reshape and refine the vision to meet market demands while maintaining a basic commitment to open systems and the open enterprise model.

One of these managers, Bob Hughes, vice president of worldwide sales and service, came to Data General after more than 15 years as vice president at Digital. Hughes is charged with focusing the worldwide sales

"We tended to be more open because we were smaller," says Skates. "We had no choice but to 'plug and play' with lots of other machines."

"It's been something of a tortuous path, but through the experience of growing this open systems business we've acquired valuable expertise," says CEO Ron Skates.



and service organizations on large enterprises, which are increasingly moving to client-server models.

Skates acknowledges that being a smaller player in a world of corporate computing giants has had its advantages. "From the beginning, our systems had more 'open' characteristics than many of our competitors' systems. That's because we were smaller and had to be nimble. We had no choice but to 'plug and play' with lots of other machines. The large companies, such as IBM, didn't have to be flexible. In fact, they wanted to build walls around their products."

In the open systems market, where hardware is viewed as a commodity, software now rules. Five years ago, customers worried that not enough Unix applications

Data General has pursued

partnerships with CA

and HP, and others,

to quiet user concerns

about the availability

of management tools

were available. Today, Unix applications abound. "Applications availability goes at the top of the list for a successful open enterprise strategy," says Steve Gardner, DG's vice president of marketing and formerly president of Integris. "The first question the smart customer asks is, 'Can you solve my specific business problem?' If we can't answer 'yes' that's the end of the meeting. In today's marketplace you have to be open systems experts. If you don't have the expertise, you cannot compete."

Accordingly, DG has forged strong partner relationships with leading providers of software applications, like Oracle and Computer Associates, and the company continues to build "best fit" relationships worldwide that increasingly

Milestones

Highlights from the 25-year history of Data General



1968

Data General Corporation begins operations in a beauty parlor in Hudson, Mass. Nine months later the company introduces its Nova minicomputer.



1980

Data General's first 32-bit computer, the ECLIPSE MV/8000, is introduced. The development effort for its "Eagle project" is chronicled in Tracy Kidder's Pulitzer-prize winning novel, "Soul of a New Machine."



1975

Data General introduces the ECLIPSE C/300, the industry's first minicomputer targeted for the commercial business marketplace.



1982

DG's first office automation software package, the Comprehensive Electronic Office (CEO) is introduced.

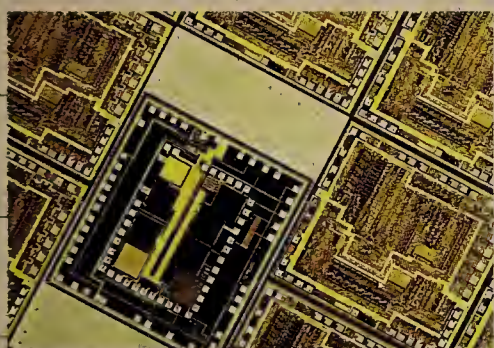
extend into co-marketing. Today, DG offers more than 3,000 applications for Aviiion systems. This includes five enterprise "Portfolio" partnership divisions: Enterprise Management, Development Tools, Integrated Financials, Corporate Infrastructure Solutions and, one of the most in current demand, Applications Reengineering.

Today, most medium and large enterprises are involved in business process reengineering, which generally leads to significant changes in information technology. Applications Reengineering ensures that the IS roadmap matches the business process roadmap. One type of Applications Reengineering, called rehosting, involves the replication of an entire software environment—compiler, database and network connections—on a new platform. Rehosting may require that applications be recompiled and run through tools and filters so they can operate on the new systems platform.

A state-of-the-art open systems environment can facili-

tate the rehosting process. Steve Gardner cites the integrated offering of Oracle's financial applications with Data-logix's Gemms process control applications that run on top of Aviiion and utilize Clariion systems. "This suite meets the needs of complex organizations in transition from the mainframe," he says. "By integrating financials and manufacturing on top of a highly reliable client-server platform, we've done something that could not have been done in a mainframe environment."

The success of DG's applications suites owes much to the robustness of DG/UX, the first Unix operating system to market with highly available symmetric multiprocessing. DG/UX, working in conjunction with Tuxedo, a leading open systems transaction monitor, brings transaction processing support into a highly available open system. Data General also led the market with the Clariion open systems storage devices, and is still the only



1988

At a New York investment analysts' meeting, Data General becomes one of the first proprietary computer manufacturers to announce that it will begin selling Unix-based open systems using standard microprocessors.

1992
DG expands its open systems product line by unveiling the CLARiiON fault-tolerant (RAID) storage systems. Users of IBM and Sun Unix-based systems will also be able to use the new storage equipment.



1989

DG shows its AViiON open systems server line at the Uniform Trade Show in San Francisco.



1993

Data General announces its powerful new AViiON AV 9500 family, capable of processing 1,600 MIPS (million instructions per second). With over 20,000 systems sold, the current AViiON installed base is valued at \$1 billion.

vendor offering an open systems tape backup device. "We weren't the first to push Unix," notes Steve Gardner, "but we were one of the first companies to do it in the huge commercial marketplace. Those who espoused Unix before us focused on engineering and back office applications."

DG's developers have maintained a Unix shell compatible with mainstream Unix flavors and dominant standards, such as XPG3 and the emerging XPG4 and Spec 1170 standards. They also incorporated additional features and higher levels of performance. "We're spending more than two-thirds of our R&D dollars on software," says Tom West. "That's about double what the software/hardware breakout was just four years ago." West regards software as the principal source of intellectual value that the company can add to the commodity economics computing. "It's software that enables you to put together all those inexpensive microprocessor-based, jelly bean components," he says,

"and scale them up to do enterprise-level computing."

The shift of emphasis to software should continue to accrue benefits to both DG and its customers. "Today, when you put together pieces of hardware, the new technology life expectancy is two years at best," West explains. "But once you solve a key software problem, you have a strategic opportunity that can last across several product generations."

In all its activities, whether developing hardware, software or new partnerships, Data General maintains a common-sense approach to building solutions to business problems. "Our culture as a small company serving customers on a global scale demands pragmatism," says Steve Gardner, "in every aspect of what we do." Ron Skates adds: "We focus on delivering systems and solutions that work. That may mean we have to sacrifice elegance for common sense. If that is the case, we will make the trade-off any day."

The Most Frequently Asked Questions

The following are answers to the questions information executives most frequently ask Data General

Q. What is your strategy for the open enterprise?

A: We are committed to achieving a leadership position in the high-end enterprise-computing marketplace. We will accomplish this by providing the industry's most complete and open solution. This includes: our powerful family of AViiON servers, our CLARiiON open storage products, our DG/UX operating system and our worldwide service and systems integration capabilities. In addition, we work with a number of the industry's leading enterprise software developers to provide a software/service portfolio based on proven open systems designs and concepts.

Q. What are the near-term advantages for organizations that choose Data General as a supplier of open systems?

A: Our server systems' processing performance has doubled every two years or less and we expect this to continue. We have added numerous software applications to our list of over 3,000, with a number of development tools, enterprise management systems, and integrated financial packages due for delivery in the first quarter of 1994. We have also recently organized to deliver a full range of systems integration services to our open enterprise customers.

Q. Can today's Unix-based systems really handle the needs of enterprise-wide computing?

A: Yes it can. Revenues from Unix-based systems have been growing at a rate of 20 percent per year in the commercial marketplace. In fact, the commercial market for Unix is larger than the technical area. One of the primary reasons for this growth

Data General invests a healthy 10 percent of its billion dollars in annual revenue in research and development. "Even so, we know we can't outspend our competitors," admits Joel Schwartz, vice president of the AviiON Business Unit. "Therefore, we try to focus clearly and act aggressively. For instance, we have been shipping DG/UX for several years with strong support for high availability and symmetric multiprocessing. Other much larger Unix providers have yet to deliver either capability."

Multiprocessing plays a central role in Data General's open enterprise strategy. "In environments where there are a large number of transactions happening very frequently, processing against extraordinarily large databas-

*"We can't outspend
all our competition on
R&D," says Vice President
Joel Schwartz, "but
we try to focus clearly
and act aggressively"*

es," said Schwartz, "multiprocessing helps the user get the most out of his technology."

DG continues to proselytize for Unix, but the company's engineers and managers no longer feel like missionaries in a proprietary wilderness. "The world has finally discovered that you can build Unix operating systems that are stable for running business applications," Skates says. "And it turns out that, instead of being harder to program—as many people insisted—they're actually easier to program."

"If there is any lingering concern," adds West, "it's that a lot of the management tools that were available to IS via proprietary systems are just beginning to come into today's Unix implementations. Data General has responded to this

is the increasing availability of enterprise software applications. For example, we now have a software portfolio of more than 3,000 applications. It includes applications that meet all users' needs, from development and application rehosting tools to enterprise-wide management software.

Q. What plans do you have to increase systems management and relational database capabilities for your products?

A: Two of our partnerships were strengthened recently. The timetable for bringing the Computer Associates CA-UNICENTER systems management product to the AViiON platform has been accelerated by six months. Also, beta software is available now for major customers with general availability planned for the first quarter of 1994. We have a similar timetable for the Oracle Parallel Server for the AViiON platform. Our company demonstrated the industry's first open systems four-way cluster running Oracle Parallel Server, using its new AViiON AV 5500 servers.

Q. How significant will the growth of Unix-based open systems be in the commercial marketplace?

A: We believe that open enterprise computing is the industry's most dramatic development since the desktop personal computer forever changed low-end business computing. Open-enterprise servers will create a similar change in high-end computing. This new enterprise computing model provides mainframe-class power, reliability and features at a fraction of mainframe cost.

Q. How are you doing in today's marketplace?

A: According to a recent report from International Data Corp., our AViiON computer line was the U.S. market share leader in medium-scale Unix-based systems in 1992. IDC also noted that our AViiON systems' business growth rate was more than four times that of the overall Unix marketplace in both 1991 and 1992. And this was before we shipped our new high-end AViiON AV 9500 line. ♦

concern through partnerships offering enterprise management tools—including Unicenter from Computer Associates, and a combination of Hewlett-Packard's OpenView with Digital Analysis Corporation's OS/Eye Node.

"We have traveled a somewhat tortuous path," Skates admits. "But through the experience of growing this open systems business we have acquired valuable expertise." As a result, the demand for Data General's systems integration services is growing rapidly. Skates has responded by hiring Don Zereski, who, as vice president of U.S. area operations for Digital Equipment, had that company's systems integration business among his responsibilities. "Don is an experienced executive who has broad hardware knowledge," notes Skates.

No major transition of the type Data General has undergone can be achieved without struggle. "It's no secret our revenues have been flat," Skates says. He explains that it

has been necessary to balance the company's need for profitability against the demands of maintaining a worldwide sales, distribution and service infrastructure and simultaneously investing in a major growth business. But Skates makes it clear that the carefully chosen strategic path has proven to be a worthwhile one, and the resources devoted to open systems servers and storage products will continue to deliver price/performance benefits.

"The move of IS to open systems has taken place more slowly than we expected," West says. "Perhaps we underestimated the culture change required. But changes in the real world always take longer than computer vendors tend to expect. It now seems to me that for most IS organizations the open systems revolution has barely started," West adds. "But it has started and it is a revolution—the most dramatic development in our industry since the PC changed low-end business computing forever." ♦

Soul of a New Company

Winning the technology war means getting there first

The Pulitzer Prize-winning book, "Soul of a New Machine," by Tracy Kidder, focused public attention on computer technology by documenting the efforts of a small systems development team led by Tom West to design Data General's first 32-bit computer, the Eclipse MV/8000, in 1980. Now the company's Senior Vice President for Advanced Development, West personifies its technology-based heritage.

"A lot of what we're doing today, is exactly what we've been doing since the early '70s," says West. "We are taking superior technology and packaging it in a way that commercial computer users can take advantage of it. Cutting-edge technology always gets integrated into

the university or research laboratory before it gets into commercial computing, but it's always been Data General's belief that the commercial marketplace is more enduring."

Yet the overall pace of technology has made significant changes in the company's approach to new products. West explains, "research and development now must be more closely integrated with the sales and marketing side than they did when we were building proprietary systems that took as many as five years to bring out. Today, since product

"Now instead of buying mediocre technology from one provider, you can choose best-of-breed technology from whomever offers it," says Tom West.

cycles have gotten so much shorter, you really can fill a perceived need rather quickly." West says the principal issue for computer systems vendors is no longer designing the fastest chip, the fastest bus, or the fastest disk. "The problem now," he asserts, "is how to get the latest commodity technology integrated into your product line before your competitors do." ♦



CIO

ERSPECTIVES

Corporate Hosts

DOZ ALLEN & HAMILTON

**COMPUTER
ASSOCIATES**
software superior by design.

GUPTA

hp HEWLETT®
PACKARD

IDC/TIS

PICTURETEL

**TEXAS
INSTRUMENTS**

**October 23-26, 1994
La Paloma
Tucson, Arizona**

PETER DRUCKER
IT ECONOMICS:
**BUSINESS VALUE &
PROFIT MAXIMIZATION**

800.366.0246
(for enrollment information)

TRENDLINES

ness! You *can't* do things overnight!"

Halloran says the CIO should use this newfound appreciation to pursue an executive relationship that includes participation in the decision-making process and to educate senior executives on how IT can help the business in its overall strategy.

"[CIOs] have the ammunition," says Halloran. "What they don't know how to do is conduct a PR campaign. You have to learn to look at the business community as your marketplace and inform them what you're doing."

For an executive summary of the survey, call 617 723-8800. ■

FOLLOWING SUITS

As anyone who followed the Rodney King or Menendez brothers trials will tell you, juries can be unpredictable creatures. But a company in Solon, Ohio, says it can help lawyers detect the method in their madness with a computer program that analyzes jury behavior in certain types of suits.

Jury Verdict Research Software, a 35-year-old legal-publishing firm, has used the results from more than 90,000 verdicts to create Case Evaluation Software, a kind of expert system that predicts who will win a personal-injury suit and what damages a jury is likely to award. Verdict information is gathered on a continuous basis from a nationwide network of court and law clerks, attorneys, legal reporters, media sources and students; the information is checked for accuracy with parties to each suit and then loaded into a database.

Users enter variables from a specific case into the system. These may include everything from the age, sex and race of the plaintiff to medical expenses and the location of the courthouse where the case is to be tried. The software then applies statistical-analysis techniques to these factors to predict the probable outcome of that case.

Users, primarily plaintiff and defense attorneys, insurers and government agencies, can lease the software for an annual fee or request predictions from the company on a case-by-case basis. For more information, call 216 248-7960. ■



OFF THE SHELF

ORGANIZING FOR THE FUTURE

THE NEW LOGIC FOR MANAGING COMPLEX ORGANIZATIONS

By Jay R. Galbraith and Edward E. Lawler III & Associates, Jossey-Bass Publishers (San Francisco), 1993

312 pages, \$29.95

What could a CIO possibly learn from a book about organizational structure that is written by academics and aimed at corporate designers? Plenty. *Organizing for the Future* is full of useful nuggets for IS executives who are rethinking the shape of their own organizations and wondering just how they fit into the design of the mother ship.

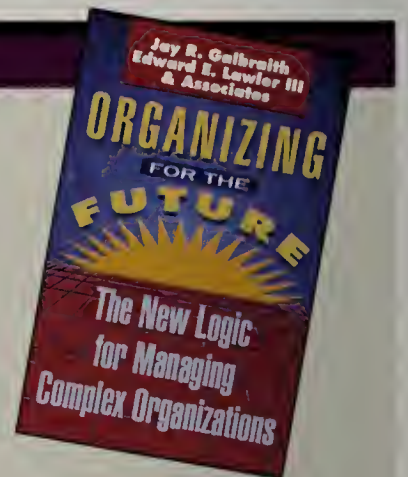
The authors (who hail from the Center for Effective Organizations at the University of Southern California) note in the introduction that "a number of factors in the business environment increasingly drive the choice of organizational forms." These include cost, speed, customer demand, quality and skill shortages. That ought to ring both macro and micro bells for CIOs.

Chapters discussing centralized staff groups and the value that corporation staff add to their business units provide insights about the role of the CIO and the diversity of the IS organization. Or, depending upon the shape of the corporation IS supports, CIOs in search of better ways to deliver quality ser-

vices to customers may be intrigued by the portfolio of new "business-unit" shapes analyzed in the book.

The meat of *Organizing for the Future* is a meditation on performance. Companies can improve their effectiveness if they can continuously improve processes, quickly introduce innovations and learn to become mutable in a fast-changing world, the authors assert. The same is true for IS organizations. Chapters on learning (and the requirements learning places on employees), teamwork, employee involvement in decision-making and the development of managers all speak to the human-resource issues that CIOs face today. They may also help spark solutions to long-standing problems, such as how to manage parallel teams or put the pressure on middle managers to adopt new corporate values. (On the other hand, IS executives have little control over corporate reward and incentive programs and may feel like spectators at a fire when reading subchapters on these topics.)

Best of all, *Organizing for the Future* is clear and easily understood—a nice surprise from a bunch of academics. ■





SUNNET MANAGER IS THE LEADING INNOVATOR, LEADING SELLER AND LEADING VISIONARY IN NETWORK MANAGEMENT. THINK WE'RE LEADING UP TO SOMETHING?

Going with the market leader is always a good idea. Especially if the market leader invented the technology. Like SunNet Manager.™ Integrated network tools for trouble ticketing, accounting, performance services—for all kinds of environments. So effective, over 13,000 installed customers have chosen it. Supported by Cooperative Consoles,™ and Project ENCOMPASS, and a full suite of connectivity products, SunNet Manager is the only logical management solution for a growing network. For a free brochure on the future of network management, call 1-800-241-CONX, Dept. CI.



SUNNET MANAGER. RUNS YOUR NETWORK THE WAY YOUR BUSINESS RUNS.

The Right Fit

No one platform is best for all applications. Finding the right one depends on your organizational objectives.

BY JAY GOLDBERG

The term "rightsizing," which became part of the corporate vocabulary in the 1990s, takes on a particular twist in IS organizations. Application rightsizing is not restricted to downsizing and client/server; rather, it is a strategy to deploy the best-possible technology to deliver the best-possible application solutions for particular business needs.

Some organizations have been successful in implementing a rightsizing strategy. Others, however, haven't been as fortunate. Before you embark on application rightsizing, you'll need to develop a clear understanding of rightsizing objectives and establish a detailed approach that will determine which applications should be rightsized and on which platform or platforms they should run.

Determine your objectives.

Rightsizing can require moving to more-expensive platforms and increasing staff rather than the opposite. Moreover, it is usually expensive in terms of training, hardware,

software, new standards and procedures, security and backup. It can be complex, time-consuming and resource-intensive.

So why bother, if it's not going to yield a quick return on investment? Rightsizing can provide users with capabilities they don't have on existing platforms. It can support corporate decentralization, improve customer satisfaction, reduce network traffic and help an organization gain experience with client/server technology. And although it generally doesn't offer immediate cost savings, long-term cost advantages (such as minimizing mainframe-upgrade costs) often result.

One of the nation's largest manufacturers of high-tech products determined that a high-volume customer-support application, requiring support for over 10,000 telephone calls per hour at peak times, would perform best on its mainframe. However, the manufacturer determined that its rightsizing objectives were to exploit technology currently on end users' desks (with high-function workstations), improve end-user productivity (through a graphical user interface) and enhance its image as a technology leader (via a client/server implementation). Optimizing the performance of the application was not a top priority for this organization.

Prepare an application inventory.

Make a list of all your applications and their attributes, paying special attention to areas related to your rightsizing objectives. You should determine the divisions or organizations that use each application, the number of users, who the owners are, the locations where the application is used, and key application requirements.

You also need to consider performance statistics, service-level agreements, target response times, avail-





The Union Pacific 7002 locomotive was built to pull heavy passenger trains over the Rocky Mountains, with massive 6-foot wheels driven by 4,000 horsepower. The 7002 ended its spectacular 32-year career as a rescue engine for stalled locomotives.

For Client/Server solutions this powerful, look to Gupta.

Face it, client/server projects demand powerful products from a solid vendor to power you through the long haul. The Gupta Client/Server System includes robust development and SQL database software so PCs can carry their share of your information load.

Scalable solutions from subnotebooks to the mainframe.

Gupta defined client/server with SQLBase®, the first SQL database server for PCs. For anything from network servers to subnotebooks, SQLBase puts true relational database power in anyone's reach. And for complete enterprise integration, our SQLNetwork™ connectivity family enables your applications to access all your organization's databases, including DB2™, Oracle® and Sybase®.

Power for team productivity.

Only SQLWindows®, our powerful application development system, combines genuine object-orientation, a friendly graphical development environment and the check-in/check-out, version control and project management your entire development team needs. And end-users can participate via Quest®, our easy client/server tool for non-programmers.

Client/Server gets done with Gupta.

Add responsive technical services and a record of industry firsts and you'll see why serious corporate client/server applications get done, now, with Gupta. For your free white paper, "Client/Server: Getting It Done With Gupta," call **1-800-876-3267** ext.101 today.

GUPTA™

POWERFUL PRODUCTS.
SOLID SOLUTIONS.



**FOR YOUR FREE WHITE PAPER
CALL 1-800-876-3267**

ability and security requirements, and capacity utilization. Look at your databases (type, size, frequency of updates, access methods); support structure (the IS department, vendors, contractors, users); modularity of applications; development language; code quality; caliber and availability of documentation; and maintainability index.

The number of interfaces with other applications and whether these interfaces are loosely or tightly coupled will yield the predominant measure of rightsizing risk. Generally, interfaces at the data-sharing level are loosely coupled, with data being either reproducible or accessible in a distributed fashion. Interfaces at the function-sharing level, however, are usually tightly coupled; decoupling requires redesign.

Identify high-potential candidates.

Your application inventory may run into the hundreds. So how do you begin to narrow down the list and identify your best rightsizing bets? The first step is to create a matrix, with the likelihood that the objective will be achieved (payback) being evaluated along the vertical axis and the number of interfaces (risk) being calculated along the horizontal axis.

Applications that fall into the upper-left quadrant have high-potential payback related to the objective and present a low risk. If your rightsizing plan includes more than one objective, produce a matrix for each. Applications that fall into the high-payback/low-risk quadrant of all your matrices are your most-likely candidates.

Analyze the applications.

Now that you've made a rough cut, you can consider whether any special requirements would disqualify an application—or cause others to be added.

For example, a Northeastern utility company had the rightsizing objective of reducing CPU consumption. An application on the initial list, although CPU-intensive, executed only during off-hours and once a month.

Therefore, it was removed from the list because it had a low overall impact on performance. Conversely, the company added an application that appeared in a less-desirable quadrant because there was a high degree of coupling between it and a high-potential candidate.

As another part of this process, you should obtain source code and verify the modularity and degree of structure needed for moving an application to an alternative platform. Any key indicators relating to the right-

**Applications in which
data access is separate
from business logic
are better candidates for
client/server applications
than are applications in
which data access
and business logic are
blended together.**

sizing objectives should be verified, and end users, developers and operations personnel should be interviewed. User satisfaction with a current application must be taken into consideration. Nothing will inhibit the rightsizing effort more than an unmotivated end-user community.

Select appropriate platforms.

Now you can begin to evaluate the technology that will be deployed for the rightsizing effort. To start, identify and list the characteristics of potential platforms. For instance, mainframes are best for applications that have many users and require high security and availability, whereas PCs and PC LANs are appropriate for local applications with fewer users and less concern for security.

Assess the application structure

with respect to the potential platform. For example, applications in which data access is separate from business logic are better candidates for client/server applications than are applications in which data access and business logic are blended together. You can move the entire application or decouple components and move parts to an alternative platform or platforms.

Prepare a project plan.

In developing your plan, consider the following questions: Is the application easy to implement and integrate? Are target applications coupled with other applications? Are software packages available for the selected platforms? What are the shortest time frames to achieve objectives? And what will be the development investment?

You will need to determine if code can and should be salvaged or if a rewrite is required. Tools that graphically display a program's organization and the impact that change will have on it are invaluable in determining whether an application can be reengineered smoothly. Tools that help port code and databases to the identified platform or platforms should also be evaluated.

Developing a time line and outlining critical resources, education requirements, target dates and success criteria are critical if you want your plan to run smoothly. It is easy to underestimate some of the nontechnical aspects of rightsizing, specifically the organizational culture. Rightsizing could have a significant impact on day-to-day activities; an understanding of the organization's culture, how rightsizing will affect it and how the culture will deal with that change must be considered in any project plan.

Rightsizing can take years to implement. It may be even longer before it begins to generate benefits. However, by following these steps, you can minimize the risks to better meet your business's needs. 

Jay Goldberg is a consultant at IBM Consulting Group. He is based in Buffalo, N.Y.

Don't let your box

No matter what species of PC you own, the future will render it extinct.

That's just the price of advancing technology. And even if you couldn't care less about the state of the art, chances are good your needs will soon outgrow your current system.

That's why our new DECpc™ XLs are



box you in.

completely engineered for flexibility and growth, designed to add years of productivity. And not only that, but they're backed with the strongest three-year warranty you can get.

Easy upgrades. The XL's modular design lets you upgrade an i486™ chip to a Pentium™ processor in less time than you'll take to peruse this ad. Or pop in an Alpha AXP™ card faster than you can read its entry in the Guinness

Book of Records™ (under "world's fastest computer chip"). No matter which course future chip design takes, Digital will have easy-to-install daughter-cards to keep pace.

Born to grow. With an XL, upgradability is no afterthought. Each PC has heavy duty thermal protection, anticipating tomorrow's faster and hotter processors. And an innovative local PCI bus lets you plug in all sorts of high speed peripherals without slowing down the

processor one bit. Your XL can grow with no fear of meltdowns or freeze-ups.

Future-proof. The only thing certain about tomorrow's technology is that it is uncertain. So be prepared for change and growth with a Digital PC.

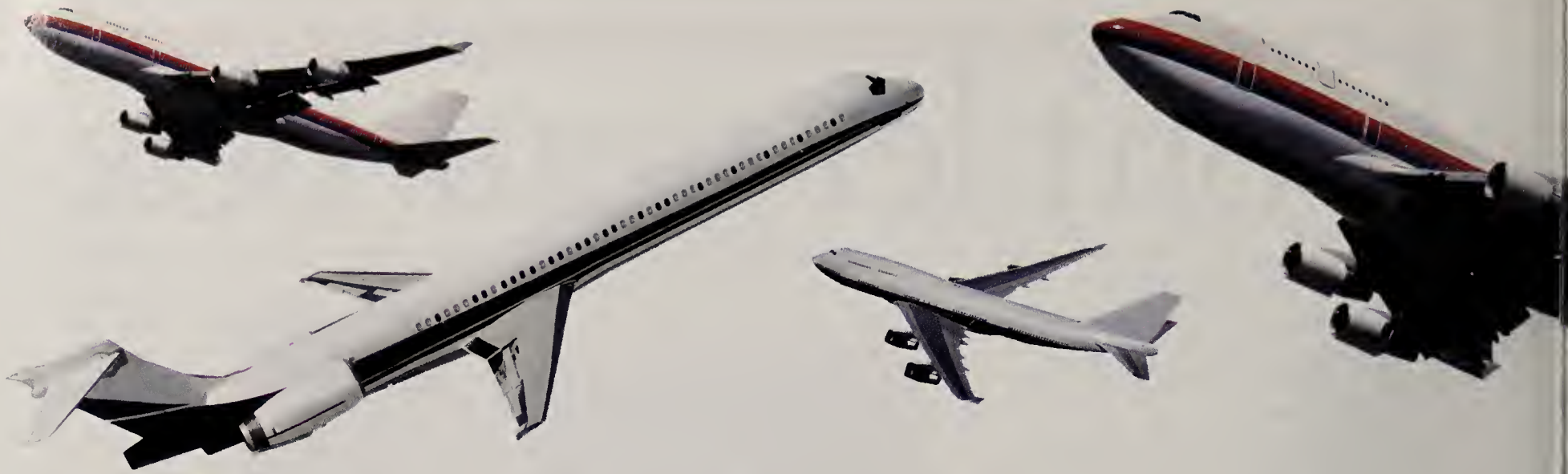
Instead of being locked in a box, you'll be beyond it.

Call 1-800-899-6196.

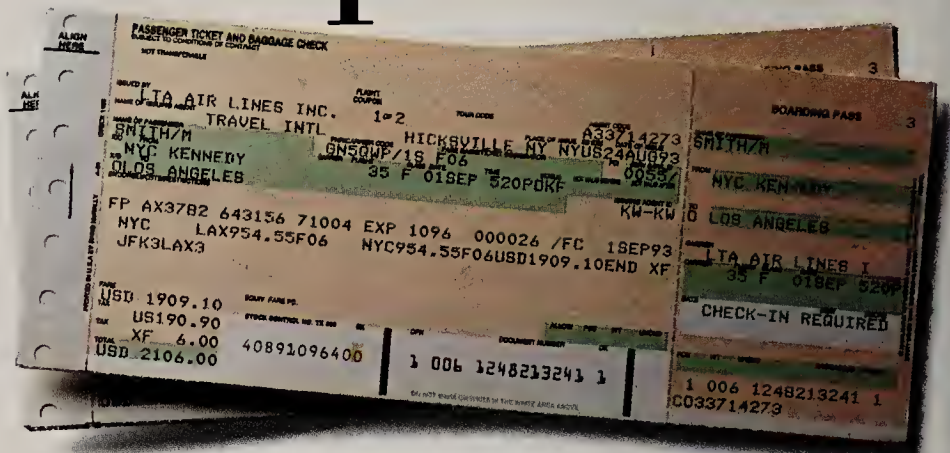
Please reference BVB when you call.
8:30 a.m. to 8:00 p.m. Mon-Fri ET.

digital™
PC
Beyond the box.

©DIGITAL EQUIPMENT CORPORATION 1994. The DIGITAL logo, DECpc and Alpha AXP are trademarks, and Beyond The Box is a service mark, of Digital Equipment Corporation. Pentium and i486 are trademarks of Intel Corporation. The Guinness Book of Records is a registered trademark of Guinness Publishing Ltd.



What makes the airlines
on thousands of planes at
to instantly
reservations,
hundred vegetarian meals?





smart enough to keep tabs
once and quick enough
respond to millions of
cancellations and even a few

DESTINATION	FLIGHT	TIME	STATUS
ATLANTA	760	1:20	BOARDING
BALTIMORE	335	2:58	ON TIME
BOSTON	608	3:43	ON TIME
CHICAGO	112	3:30	DELAYED
DENVER	453	3:35	ON TIME
DETROIT	487	4:15	ON TIME
LOS ANGELES	676	4:02	ON TIME
MIAMI	354	5:12	ON TIME
NASHVILLE	121	6:45	ON TIME
NEWARK	169	6:50	ON TIME
NEW ORLEANS	842	7:07	ON TIME
PHOENIX	697	7:55	DELAYED
SAN FRANCISCO	468	5:35	ON TIME
SEATTLE	369	8:12	ON TIME
TUCSON	225	8:30	ON TIME

1:12P

PCs, workstations and midrange computers, linked to

Mainframes, what else?

Obviously, airlines need access to vast amounts of information. Information that could be anywhere from across the airport to across the world.

And, invariably, they need access to that data instantly.

That's why mainframes are such essential parts of their information networks. By being linked to a mainframe, every PC and workstation has instant, around-the-clock access to the enormous amount of information needed to run an airline.

(How else could an agent in Dallas be able to tell in an instant which seats are available on a return flight from Paris—and, the next instant, check how

long that departure from Sydney will be delayed?)

All things considered, nothing "serves" the rest of a computer network's "clients" to the degree a mainframe can. And the new "openness" of mainframes allows them to serve just about any kind of hardware and software.

Airlines are just one of the many businesses whose success is dependent on information. On the swift and reliable accessing, managing, distribution and protection of that information. All the things a mainframe is designed to do. Better than anything else.

IBM®

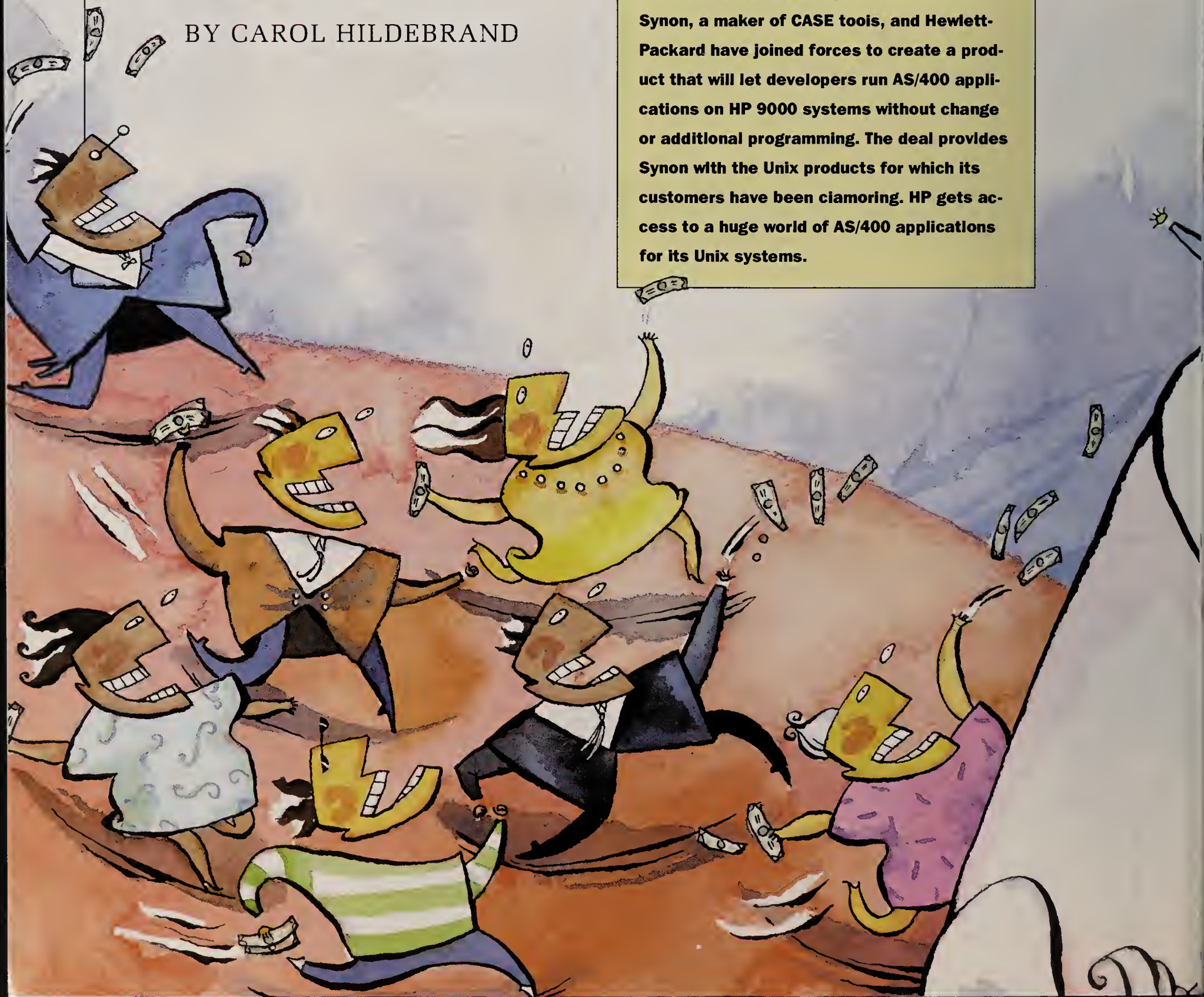
The IBM System/390®

FINDING YOUR BETTER HALF

BY CAROL HILDEBRAND

STORYLINE

Companies enter joint marketing agreements to obtain something they lack on their own. Synon, a maker of CASE tools, and Hewlett-Packard have joined forces to create a product that will let developers run AS/400 applications on HP 9000 systems without change or additional programming. The deal provides Synon with the Unix products for which its customers have been clamoring. HP gets access to a huge world of AS/400 applications for its Unix systems.





In a strategic marketing agreement, two companies join forces because each has something the other needs. In the technology world, that could be market share, technical expertise or name recognition. As more IT vendors move toward creating products through cross-licensing pacts rather than in-house development, CIOs will increasingly find themselves on the buying end of these deals.

For every successful joint marketing venture, there are plenty that have become as worthless as Confederate money. Sometimes an agreement will look great on paper, but the final result turns out to be one-sided. (A company that doesn't benefit from an agreement is not going to put its all into implementing it.) Or maybe the companies involved didn't take the time to brief their sales forces on the products or how to sell them. End result? Death—not by disinterest, but by poor execution.

“You absolutely must figure out how whatever you put together is going to solve the problem customers have.”

—BILL GRABE

But not all joint marketing agreements are losers. When done right, they create valuable new products or get existing products to new markets faster, or through more-varied distribution channels. In most such cases, the customer shares in the rewards.

An accord between Synon Inc. and Hewlett-Packard Co. promises to deliver these benefits. Announced in June, the Synon/HP deal aims to provide cross-platform portability for IBM AS/400 applications to HP's Unix-based HP 9000 systems. The companies are creating a Unix generator option to Synon's AS/400-based CASE tools. Using the Synon tool, application developers will be able to run AS/400 applications on HP 9000 systems without change or additional programming.

An exciting new product is not enough to ensure the success of a joint agreement, however. A well-defined plan and a clear, shared vision are “the two most-important ingredients of a joint marketing agreement,” says Bram Bluestein, vice president at A.T. Kearney Inc., a management consultancy headquartered in Chicago. There has to be “consensus within both organizations that execution of the vision is a win-win situation for both.” If the plan is not well-thought-out,

“then there's no measurement to know if you've accomplished what you set out to do. If it's not a win-win situation, one organization will end up feeling disadvantaged,” which can paralyze the whole operation.

Another important prerequisite is customer buy-in. “If it's a new technology, it needs to win first with customers,” according to Bluestein. Bill Grabe, a partner in General Atlantic Partners, a New York-based investment firm that holds a major stake in Synon, agrees. “You absolutely must figure out how whatever you put together is going to solve the problem customers have.” According to Grabe, customer demand was the driving force behind the Synon/HP agreement.

THE PROBLEM THAT HP AND Synon customers want solved is a familiar one. Most companies moving to an open computing environment can't just dump their older, proprietary systems, which often contain their most-sensitive applications. The product of this agreement will let companies run their existing AS/400 applications on their new HP Unix machines.

The deal offered several benefits for the two principals as well. Privately held Synon

Tips For Two

.....
While every joint marketing venture is unique, some common guidelines apply

Vision and plan for two. “You have to have a shared vision of what the business is going to become [and] a joint plan to accompany that vision,” says Bram Bluestein, vice president at A.T. Kearney Inc., headquartered in Chicago.

Make very clear who is doing what. “You have to have clear accountabilities across the different organizations,” says Bluestein.

Appoint one main driver. “Typically, you need to have one hand on the steering wheel...to make sure that the plans are implemented,” says Bluestein.

Watch out for culture clash. “Trying to blend radically different cultures will not generally work,” says David Reibstein, William Stuart Woodside professor and professor of marketing at the Wharton School at the University of Pennsylvania in Philadelphia.

Work on establishing mutual trust. “A lack of trust to share information undermines a lot of joint ventures,” Reibstein says.

Don't ignore the operational details. “You have to worry about the day-to-day management as much as you do the long-term plan,” says

Bluestein. There should be a clear understanding of who will contribute what and when. Creating a joint organization can help make this work.

Integrate your efforts across functions. While lack of communication between R&D and sales and marketing is not limited to joint marketing agreements, working within such pacts often exacerbates the problem, Reibstein says.

Consider including a so-called sunset clause. This establishes a finite time frame for the association and allows you to “extricate yourself...if you're not satisfied,” says Bluestein. However, cautions Reibstein, it can also lead to an erosion of trust. “It's like entering into a marriage, but the divorce is scheduled five years from now.”
—C. Hildebrand

controls about 70 percent of the CASE-tool market for AS/400s and has a number of other strong ties to Big Blue, but the company needed to grow. Andre Boisvert, who negotiated the deal as vice president of marketing at Synon, says that improving its market share presented several difficulties. While AS/400 market demand was slowing, competition was increasing, so wringing out a few more market-share points would fall into the getting-blood-from-a-stone category of effort.

At the same time, Synon was being pressured to diversify from a couple of directions. Investors wanted the company to move off the growth plateau it had hit as the AS/400 market flattened. Customers were turning up the heat, too. Nearly every time Synon put out a bid, Boisvert says, they'd run into the question of when they were going to move in the direction of open systems. "And customers equate open with Unix—I had to have a commercial Unix strategy."

HP was a logical choice for a partner. International Data Corp., a market-research company based in Framingham, Mass., rates HP's HP-UX as the number-two product of both commercial and technical Unix variants. (Synon has also signed an agreement with IBM, the number-one commercial vendor, for its AIX Unix strain.) Boisvert says that internal market research led the company to HP as well.

On HP's side of the equation, Bernard Guidon, general manager of HP's general systems division, says that his company had been eyeing the AS/400 world for some time. He estimates that HP-UX has grown in the commercial sector at the rate of 40 percent per year for four years straight. As HP-UX spread in the commercial world, customers increasingly asked for the ability to coexist with older, proprietary platforms, such as AS/400.

Furthermore, Unix is not blessed with a multitude of commercial applications, whereas the AS/400 platform has about 20,000. Providing a way to get at those applications could increase HP's market share significantly.

"It was clear that we wanted to position ourselves into the AS/400 domain, and the key success factor to doing that was the need for the platforms to coexist," Guidon says. With Synon obviously the top tool vendor to the AS/400 arena, "we said, 'Hmm, we need to talk to them.'"

While both companies' market research had brought them to the same conclusion,

the agreement that eventually grew out of this owed something to kismet as well as to the numbers.

For example, HP and Synon started talking after Boisvert and Willem (Wim) P. Roelandts, vice president and general manager of HP's computer systems organization, ran into one another on a plane.

Boisvert says they spent much of the coast-to-coast trip in the coach-class kitchen, scribbling notes on cocktail napkins and talking. When Roelandts told Boisvert to get in touch with Guidon to work on the agreement, it was kismet again: The two men had worked together in the past—when Boisvert was at Cognos Corp.—and had hit it off in a big way. "We had a very strong working relationship," says Guidon. "Everything was clicking so nicely, it was unbelievable."

Both men say that since the deal made good business sense, it would have happened regardless of the principals involved. (Subsequent events will give the companies a chance to test this assertion. Boisvert moved to Wang Laboratories Inc. in October, mainly to cut down on his cross-country trips, he says.) But the underlying elements of trust and shared history enabled them to forgo the customary jockeying for position and craft a stronger, deeper agreement, they stress.

For example, Guidon says he committed HP research-and-development dollars before the agreement was signed, which cut the time needed to draft the agreement roughly in half. "We knew it was going to work, so we could move fast on this," he says.

Boisvert agrees that it helped to be able to get down to work without having to wait for the legal staff to settle things. "Bernard would tell *his* lawyer to stay off my back, and I would tell *my* lawyer to stay off my back—we'd get something signed eventually," he says.

ANOTHER BIG WRINKLE THAT Guidon counted on Boisvert to iron out was lightening Synon's traditionally deep Blue hue. Not only was Synon at that time making tools exclusively for IBM platforms but IBM held a 10 percent equity stake in the company, which put two IBM executives on the board of directors. Boisvert gave his word that when the proposed agreement was put to a vote, the board would green-light the pact. "When the

"It was clear that we wanted to position ourselves into the AS/400 domain, and the key success factor to doing that was the need for the platforms to coexist."

—BERNARD GUIDON



When it comes to implementing client/server computing, you probably know where you want to be. What you may not know is the best way to get there. Allow us to offer a solution. The Powersoft Enterprise Series. Devised



right from the start to provide the ideal tool for each level of the organization, the Enterprise Series is the only family of integrated client/server development tools that empowers all your users to develop applications, to share them in whole or in part and to save time and eliminate redundancy by building on each other's efforts.

For IS developers there's the award-winning PowerBuilder™ Enterprise, robust enough for enterprise-wide applications. For desktop developers there's the highly affordable PowerBuilder Desktop. For savvy end users there's PowerMaker™. And for access to data made easy, there's PowerViewer™.

All four products are intuitive, object oriented and Windows®-based. But behind each is the power of our common object technology, a sophisticated, industrial-strength programming technology. Robust enough for teams of professional developers to build large-scale mission critical applications quickly and efficiently. And sophisticated enough to appear simple. So that end users can

build or adapt their own applications.

Environment), already endorsed by

Right out of the box our

more than eighty partners. Which means

Enterprise Series gives

CLIENT/SERVER

you more functionality than any other

client/server development environment.



You get tightly integrated support

your existing systems are supported and

for multiple databases and centralized

you're forever free to select the tools

application management, not to mention

and technologies best for your business.

comprehensive reporting and end-user

Over 20,000 developers are now

support. There's the impressive power of

creating client/server applications using

our WATCOM™ SQL 32-bit relational

Powersoft products and services. Making

database engine.

us one of the fastest growing companies



POWERSOFT

in the business.

To find out if we're right for you,

And to assure

just call us at 1-800-395-3525.

consistency across all

After all, why merely keep your head

of your systems, there's our CODE initia-

above water when you can be standing on

tive (Client/server Open Development

solid ground.

Powersoft™

Building on the power of people.

"The thing I think undermines a lot of joint ventures is the lack of trust to share information."

—DAVID
REIBSTEIN

time came, we went for it," Boisvert says. "Yes, there were some disagreements, but it got through. Bernard just had to trust me."

Mutual trust between the two parties is important to any joint marketing venture, according to David Reibstein, William Stuart Woodside professor and professor of marketing at the Wharton School at the University of Pennsylvania in Philadelphia. "It helps tremendously," he says. "The thing I think undermines a lot of joint ventures is the lack of trust to share information."

Boisvert and Guidon say their biggest hurdle was finding time in their jam-packed schedules to meet. Guidon works out of Europe and Cupertino, Calif., while Boisvert at the time was bouncing from coast to coast. The San Francisco airport became a popular meeting place, where the two would snatch a minute in a lounge before hopping respective flights.

FROM EXPLORATORY CONVERSATION to PR drumroll, the agreement took about seven months to complete, but the actual structuring of the pact took only about two. The rest of the time was spent in reality checks. The companies had to test the technical specifications to see if Synon's tools could actually function on a cross-platform basis, and they spent some time asking customers their opinions. According to Boisvert, customers were so excited, "we had to take them off the ceiling." This reaffirmed the two companies' sense that if they made it, businesses would buy.

One interested client is Cargill Inc. A large, privately held agribusiness company based in Minneapolis, Cargill is Synon's biggest customer. When Guidon and Boisvert sounded out Lloyd Taylor, Cargill's corporate vice president of information technology, on the cross-platform portability scheme, "we definitely encouraged them to do it," Taylor says.

This is not surprising, since Cargill uses a Synon CASE tool on the 200 or so AS/400s deployed throughout the corporation and is planning a move toward open systems. But, Taylor says, with Cargill's large AS/400 investment, the move "isn't going to happen overnight. Therefore, interoperability is a major concern."

The company plans to standardize on HP 9000s and IBM RS/6000s for servers. So Synon's agreement with HP

and the IBM marketing agreement for AIX give Cargill a migration path for its home-grown applications. "Assuming it works, it will become a major benefit to us," Taylor says.

Boisvert says that HP's ability to pick a partner and then integrate the agreement into its business has also been critical to the success of the deal. "HP is smart enough to identify what they're good at and not good at and what it is that they want. Then, they only go after the markets they've identified."

The company also doesn't balk at licensing technology instead of building it themselves, Boisvert says. He points out that HP has licensed IBM's CICS transaction processor rather than try to reinvent the wheel.

HP's second strength, according to Boisvert, is the way it handles the implementation of its agreements. He says that companies he's worked with in the past have used the separate-but-equal method: Development creates a product and then tosses it over the fence to marketing, and never the twain shall meet. "HP will not just do a tech deal," Boisvert says. "When they make a deal, it's integrated."

Grabe agrees, crediting HP with doing a "wonderful" job of executing the agreement. "I'd rather have a couple of dedicated individuals who want to make [the agreement] work than the best contract in the world," he notes.

Development for this particular agreement is being carried out primarily by Synon, with HP contributing equipment, technical people and access to the company's development laboratory.

When the time comes to market the product, the companies will work together even more closely. HP and Synon are currently pushing the information out to sales and marketing within the companies.

For example, the HP sales executive for the Americas recently met with his Synon counterpart to work out the best ways to call on customers together and to handle promotion. In this way, the two companies hope to avoid the confusion within their sales forces that can often stymie a marketing agreement.

Although the agreement appears to be going well so far, even the most gung-ho marketer has to acknowledge that the best-laid marketing plans are just so much paper and cheerleading until a product appears. For Synon and Hewlett-Packard, that's this month. **CIO**



SAVE \$29



YES, enter my one-year subscription (21 issues) to CIO magazine and bill me later for only \$69, a savings of \$29 off the basic rate.

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

The basic one-year subscription rate for CIO magazine is \$98.

This is a domestic rate only (U.S. and Canada) The foreign rate is \$185 U.S.

JUN94

**PROCESS
IMMEDIATELY**



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 1020 FRAMINGHAM, MA

POSTAGE WILL BE PAID BY ADDRESSEE

CIO Magazine
Attn: Circulation Department
P.O. Box 9208
Framingham, MA 01701-9486



Fred Meyer Retail Training:

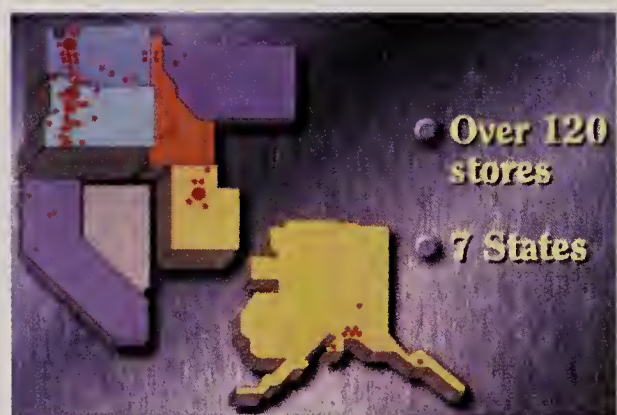
THE CIO'S PERSPECTIVE ON MULTIMEDIA

In the past two years, Fred Meyer has successfully rolled out IBM multimedia training to 105 stores. Today, the retailer averages 18,000 course completions a month. Here's an inside look at how this success story happened.

Imagine a store the size of five football fields with 225,000 different items in stock. Then imagine walking up to a salesperson and inquiring about the specific features and benefits of a particular product.

At Fred Meyer, the odds of getting a well-informed answer are higher than ever, thanks to employee training with IBM multimedia.

Fred Meyer is a \$3 billion retailer with 128 stores located in the Pacific Northwest. Over 100 of those outlets are giant stores that are essentially "one-stop shopping centers." Fred Meyer's uniquely accurate theme is "You'll find it at Fred Meyer."



"As soon as they complete a single module, employees are hooked." — Pat Ogborn, Fred Meyer

Walking the aisles, it quickly becomes obvious that consumers need not shop anywhere else — for anything. Under one roof, you'll find groceries, jewelry, lumber, curtains, cameras, stereos, clothing, garden supplies, pharmaceuticals — you name it, and you'll find it.

Training employees at each location for such a broad product line is the kind of challenge that would give most human resources personnel nightmares. At Fred Meyer, the challenge has been met with unusual resolve and creativity. The company's solution has relied not only on state-of-the-art IBM multimedia technology, but also on a very high level of innovation in applying this technology.

A partnership for employee education

Crucial to success has been strong partnership among Fred Meyer, IBM and Graphic Media, the IBM Business Partner that is developing the courseware. The partnership has enabled Fred Meyer to move swiftly in rolling out the program. Plans were first conceived in late 1991; by June, 1992, nearly 100 stores were installed. Even more impressive: by year-end 1993, more than 240 training modules were in operation.

"Our rollout is proof that even major projects can happen fast," says Wally Pfeiffer, vice president of personnel. "Clearly, this very important partnership made the acceleration possible."

Fred Meyer selected three broad areas in which to deploy multimedia training: product education, job skills and corporate information. The company has moved most aggressively in deploying the product education training. Here a fourth party was brought to the table: the manufacturers of the products.

A unique alliance enables these vendors to work with Fred Meyer not only in formulating the curriculum, but also in funding courseware development. Vendors underwrite a portion of development costs. For vendors, the advantage of this approach is obvious: the training modules become an extremely cost-effective method of teaching retail employees how to sell their products better.

Generally, training modules are created to support a set of related products from a single vendor. Some modules involve multiple vendors — typically those not large enough to fund development alone.

Still another partnership involves the employees themselves. While job skills training and corporate information modules are typically offered on company time, product education modules are a voluntary confirmation of required (on-the-clock) training and, as such, are taken on an employee's own time. Of course, there's an incentive: employees receive a Fred Meyer gift certificate for each off-the-clock training module completed.

"We've had tremendous employee response," says Pfeiffer. "We are currently averaging 18,000 course completions per month."

"As soon as they've completed a single module, employees are hooked," adds Pat Ogborn, assistant vice president of employee development. "They love the method, the new medium for training; it's so different from anything they've experienced. It makes training

fun and informative — which is crucial for any training."

1. Product training goals

"We have a clear philosophy for our product education training," says Ogborn. "If you look anywhere in retail today, the products are the same across the board. The question is, how can we get customers to buy those products from us? With the right training, we can help customers find the right product for their needs. Well-informed employees, together with effective customer service, go a long way to complete the sale."

"In our huge, multidepartment stores, employees are often asked questions about products outside of their area. Cross-information is crucial; customers don't like to hear 'I don't work in that department.' Our goal is to bring employees up to a common level of knowledge about as many products as possible."

"With this training," adds Pfeiffer, "we can truly serve our customers better. We're able to emphasize features and benefits of products, and we can differentiate one product from another. The objective is to convey the essential information about a product — its characteristics, what makes it a quality product, why Fred Meyer carries it, and how the customer can use it."

2. Skills training goals

For its job skills modules, Fred Meyer's goal is to help employees perform on-the-job procedures consistently. Modules will address everyone from cashiers to salespeople to freight personnel; salespeople, for example, can learn how to cut keys or mix paint.

"Job skills modules are perfect for anything requiring a process — a sequence of A-B-C-D-E-F-G," says Ogborn. "A tutorial first educates the employee. Then comes an evaluation; the system will monitor the employee as he or she answers questions or performs a simulation. If necessary, it can send the employee back through the tutorial for review."

"From a corporate perspective, the job skills training modules give us consistency; we can ensure that every employee in a particular area has completed training via the exact same steps — and has been approved by the system."

"From a store management perspective, the modules free up supervisors from this important but painstaking training. Managers don't have time to go through this with all their people. And even if they did, it's likely that all the

detailed steps won't be covered as thoroughly as we can do with a standardized course."

3. Corporate information training goals

In addition to product education and job skills training, Fred Meyer is also using multimedia training to present corporate information. The first of these modules is a corporate orientation; employees learn about the company's history, the company's retail philosophy, and the role of employees in Fred Meyer's success. Other modules will be developed for policies and procedures, as well as health and safety issues.

"OSHA monitors our delivery of health and safety training," notes Ogborn. "This system gives us the ability to present a clear audit trail, showing which employees received what training at what time."

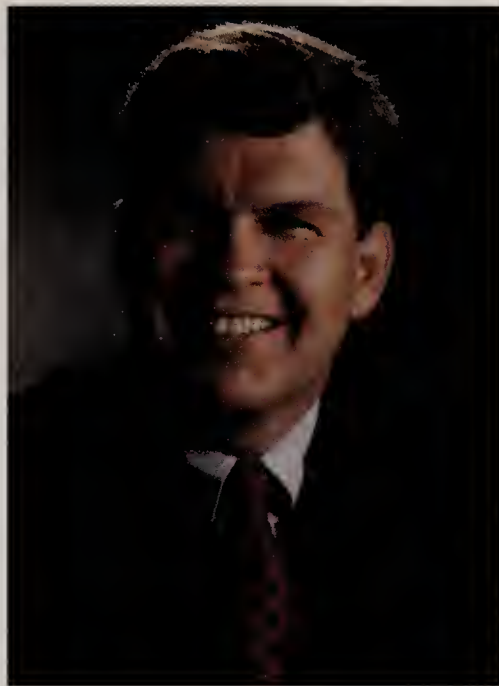
Impressive results

Fred Meyer's early analysis — a non-scientific study — indicates that multimedia training is working very effectively. Three months after training, employees were still able to retain 70-95 percent of key information.

Just as important, employees are tremendously enthusiastic. "Employees are seeing the system as a valuable tool to help serve customers better," says Pfeiffer. "They're more confident in greeting customers, because they're more product-knowledgeable. Instead of resorting to a sales line, they can talk about their product knowledge. Best of all, the employees are coming back again and again to participate."

At Fred Meyer, the arithmetic is simple. Take a distributed workforce of 25,000 employees across 105 giant stores, multiply by 225,000 product questions, divide by training development cost, and determine a balance that adds significant profit to the corporate bottom line. The solution: IBM Multimedia. Proof demonstrated by Fred Meyer. 

For more information, contact George Greene, IBM Corp., 1211 S.W. 5th, Portland, OR 97204, (503) 294-6716; or, Tom Shreve, Graphic Media, Inc., 411 S.W. 2nd, Portland, OR 97204, (503) 223-2262; or, Pat Ogborn, Fred Meyer, Inc., 3800 S.E. 22nd, Portland, OR 97202, (503) 797-7865.



Ron McEvoy, Senior Vice President and Chief Information Officer, Fred Meyer

Talking To The Top

Ron McEvoy has been the senior Fred Meyer executive driving the retailer's move into multimedia training — and into IBM Ultimedia training in particular. Backed by over 20 years of retail Information Services experience, McEvoy joined Fred Meyer in 1991.

Q What differentiates Fred Meyer in the marketplace?

A Probably the single most unique thing about Fred Meyer is that we offer nearly every type of retail product imaginable in one store location. Because we sell everything, we have a very interesting and unique checkout environment. What customers have in their shopping cart is just an amazing visual experience. People quite often have things like a potted plant, a hammer, milk, some wash cloths, a blouse, a toy, a CD, a small piece of jewelry, cosmetics, and some apples which we have to weigh. It creates a challenge at the checkout process for our cashiers.

We have a unique customer environment and we expect a lot from our employees. In

turn, we give a lot of value for those customers who choose to shop with us. We save them an awful lot of time and money by providing a high level of product value, one-stop shopping and one-stop checkout.

We try to assist our customers in understanding that we have the best value and the largest assortment to meet their needs. In order to convey that, our employees need to have product knowledge. That's a differentiation factor for Fred Meyer. We can work with customers and give instructions in selecting products to redo an entire bathroom. We can also help customers select the right kind of vacuum cleaner. We can help customers select the right kind of paint. We offer product knowledge spanning all the product areas.

Our employees can move across various areas including different types of products during their career with Fred Meyer. In food, they might move from grocery to produce to dairy; or they can move from any of the food areas over to our home improvement area.

Q How was product training delivered in the past?

A The vendor representatives used to come to the stores and meet with a group of employees and talk to them about why, for example, Glidden Paint was a good paint. Studies show that the retention of that type of standup training is very low. We know also that it was tough for our employees to take the time for training, because it interrupted what they were doing and was not based on their schedule — it was based on the representative's schedule. So our ability to get everybody involved was difficult and retention was low. Also, there was no program for reward, and there were no statistics gathered as to the individual's

(Continued, page 6)

BOOZ·ALLEN

The Systems/Business Balancing Act



& HAMILTON



Great works of art don't just happen. Neither do successful information systems.

Like sculptors, systems consultants must carefully balance seemingly opposing forces: the desire for technological innovation must be weighed against business goals and user needs.

That's why all our systems assignments start at the beginning. Booz·Allen industry strategists and operations experts work up-front with our information technologists to gain an understanding of where our clients are—from an overall business perspective—today. And what their goals and strategies are for tomorrow.

Our STRATEGY-DRIVEN SYSTEMSSM approach ensures that we take the concerns of both business and information executives into account on every IT assignment. Weighing the needs of the business and applying the right technologies, we develop systems that further the overall goals of the enterprise...systems at the heart of our clients' business...systems that drive success.

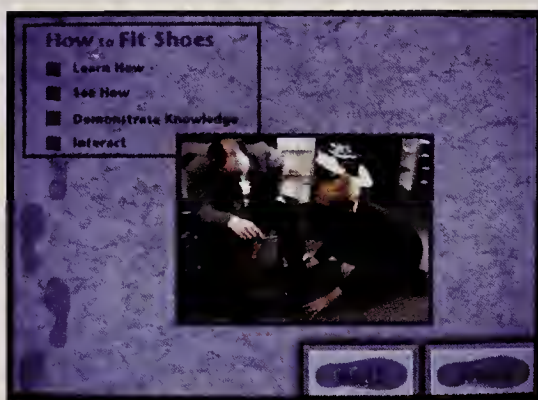
Information Systems Group

212 697 1900

skill base — what had they learned and retained. As a result, we had no central control or even store-level control that was easy to access and that gave us an understanding of how product-smart a particular employee was.

Q What are Fred Meyer's training objectives for multimedia?

A We want our employees to work with our customers and know our products, in order to provide a better level of customer service. Our multimedia training programs provide product knowledge, Fred Meyer corporate knowledge and procedural job skills



"...Our management team voted 100 percent to go forward and replace the Macintosh machines with the IBM Ultimedia computers as fast as we could."

knowledge — all of which affects the customer.

We have a very strong focus on working with our key vendors to help us put together multimedia training sessions that allow our employees to become experts in that vendor's product. By working closely with the vendor in putting these together, not only do employees get expertise in the product of paint, for example, but there are very specific opportunities for the vendor to sell employees on why

Glidden Paint might be better than some other paint. Not only are employees getting product knowledge, they're also getting sales technique training for that product as well.

Multimedia training is not offered for every product, but it does span the many product areas.

Q Why did you choose IBM Ultimedia computers for your multimedia platform?

A Three years ago, we had a small number of low-function Macintosh computers — small screen, black and white — that were used early on to provide basic multimedia product training. We began looking at alternative approaches, in order to strengthen our program.

Our management committee, of which I am a member, received a presentation comparing two technologies. We took the Macintosh program and compared it to a similar product training program done on the IBM Ultimedia computer. After the presentation, our management team voted 100 percent to go forward and replace the Macintosh machines with the IBM Ultimedia computers as fast as we could.

The IBM Ultimedia features include a large color screen, superior sound reproduction, motion video alongside graphics, and a touch screen. These features provided us with a quantum leap in technology. Our management committee realized without question that the training delivered with Ultimedia technology held your interest more, was smarter, had better testing/scoring capability, and allowed us to capture centrally all the information from each course, so we could start building a skills database on our employees.

Q Where is multimedia training delivered?

A We use Ultimedia computers in each of our stores, as well as in our central office.



"The reception to the IBM Ultimedia training shows in the numbers.... Where it was warm with the Macintosh, it's hot with the Ultimedia training."

Q Who develops Fred Meyer's multimedia training programs?

A Product vendors are very involved in helping us put training programs together, both with money and support. We use Graphic Media, an IBM Business Partner, to develop the modules, which helps ensure consistency and continuity in the look and feel of the training.

Graphic Media is working with our people to help us understand the process of storyboarding, allowing us to do some of the developmental work ourselves. That skill transfer allows us to roll out more training faster and at a lower cost, while still maintaining consistency.

Q What has been the reaction to the Ultimedia training?

A The reception to the IBM Ultimedia training shows in the numbers — significantly increased participation by both vendors and employees. Where it was warm with the Macintosh, it's hot with the Ultimedia training.

Multimedia Training: How It Works

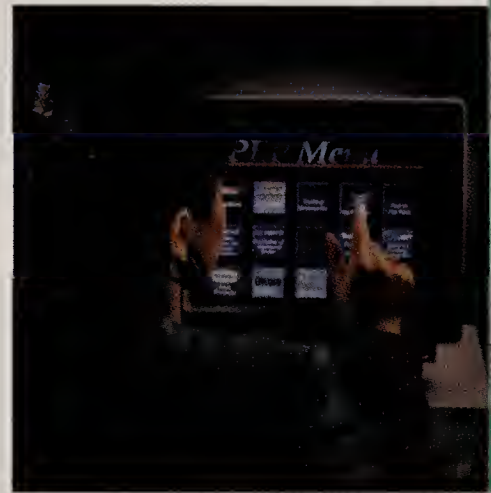
Multimedia allows Fred Meyer to do away with such traditional trappings of computers as the keyboard and mouse. At Fred Meyer, employees interact simply by touching the IBM touch screen. "If there's one thing that's a deterrent to computer use for some people, it's the keyboard," says Pat Ogborn, assistant vice president of employee development. "But people seem to like touching the screen. It's comfortable and unintimidating."

Before use, a screen-saver plays the message, "touch screen to start." For beginners, an introductory module explains the computer system — right down to adjusting the volume control.

Modules begin with a short introduction that explains what the course is about. A "pre-quiz" then examines an employee's existing knowledge. This quiz alerts the employee to the key elements that should be learned during the course.

The complete course typically runs 20-25 minutes and is delivered with a rich mixture of photographic images, audio voiceovers, text and graphics. An animated character guides the learner through the tutorial, often assuming different personas. Many modules now also include full-motion video — allowing dramatic visualization and enhanced employee engagement.

The course ends with a "post-quiz," which is actually the same as the pre-quiz. If the learners miss any of the questions, they are quickly guided back to the relevant tutorial portion and then asked the question again. 🌀



"People seem to like touching the screen. It's comfortable and unintimidating." — Pat Ogborn, Fred Meyer

Q Do you anticipate new applications in the future?

A The list is almost infinite. I'm looking at a development list that includes more than 20 new applications.

Examples.... How to work the produce area — which is very volatile, because if the lettuce wilts, it won't be sold. State information and training needs, because we operate in

many different states. How to fit shoes properly in our shoe department. How to merchandise our apparel better. New employees: we want them to understand the Fred Meyer way of thinking about customers, and we want it to be consistent.

Another area that we believe will benefit from Ultimedia is cashier training. We have focused on making our cashiers more productive and making their jobs as simple as possible. The value to the business is immense

when they do their job smoothly and quickly for the customer.

Q What benefits have multimedia training yielded?

A We have better-skilled employees, and better customer-service-sensitive employees. This has resulted in increased sales.

Q How would you advise other information executives who are considering making the move to multimedia?

A You need to reengineer the way you educate your employees. Don't just do it differently. Rethink the process of education. If you just automate what you have, you will not experience the best value for your investment.

We believe that IBM's Ultimedia capabilities do get the attention of the person being educated and drives home the points we're trying to make in training. 🌀



STATE-OF-THE-ART IBM Multimedia Technology

Fred Meyer chose IBM foremost for its ability to deliver powerful, state-of-the-art multimedia technology. "We had seen some other alternatives," says Wally Pfeiffer, vice president of personnel, "but IBM's presentation showed us capabilities we hadn't even thought to explore.

"IBM's ability to integrate the system was also important.

From a technological perspective, they could deliver an integrated multimedia system that would tie into our corporate network. And from a development perspective, IBM could bring in the key talent of its Business Partner, Graphic Media, to create the courses."

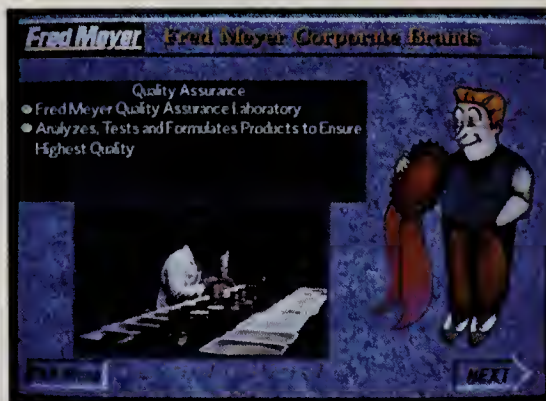
Fred Meyer is basing its training on IBM's integrated PS/2® Ultimedia Model M57 486 SLC2, which provides powerful XGA graphics, integrated premium-quality audio, and a fast built-in CD-ROM drive. Inside every PS/2 is IBM's state-of-the-art ActionMedia II card, which uses DVI technology to deliver dramatic full-motion video directly from a CD-ROM disc. Completing the system, an IBM touch display provides an elegant, intuitive user interface.

On the software side, powerful operating system support is provided by IBM OS/2®. In addition, courses are being created with IBM multimedia authoring tools.

Of crucial importance to Fred Meyer is IBM's ability to network each Ultimedia system to the company's central mainframe, an IBM ES/9000™. This networking allows Fred Meyer to gain a "corporate view" of its training across nearly 100 stores. The company will be able to review how many employees are being trained for particular products or particular skills, and how this training is affecting sales. In addition, Fred Meyer will be able to keep a centralized file on each employee, showing progress in training. "It's effectively an employee transcript," says Ogborn.

From advanced multimedia technology to a road map for corporate integration, IBM provided the key role of technology leadership. "We've been able to present a total package solution, with future growth enabled," says George Greene of IBM.

No less important, the IBM technology has been extremely reliable. "We've had a 99 percent success rate," says Ogborn. "It's tremendous to be able to work with a new technology that is as stable as IBM technology is for us today. Reliability has exceeded my expectations." 



For more information on IBM multimedia products and services, call the IBM Multimedia Information Center at 1 800 426-9402.

IBM Ultimedia is pleased to present this special multimedia editorial section. This bimonthly forum explores how IBM multimedia technology is reenergizing business with an exciting new vision of interactive communications.

Want to have your stories published?

To forward leads for IBM multimedia stories or to suggest other article topics for this section, fax a note to (404) 238-4298, attention "Editor, *IBM Multimedia Solutions*." Or, write the Editor at IBM Corp., 4111 Northside Parkway, Internal Zip H4P21, Atlanta, GA 30327.

Get a free subscription — and more information!

For a free subscription to *IBM Multimedia Solutions* magazine — or to get more information on IBM multimedia products and services — call the IBM Multimedia Information Center.

IBM Multimedia Information Center

1 800 426-9402, Ext. 170

(U.S. and Canada only)

Outside U.S. and Canada, (404) 238-1282

The center is open weekdays, 9 a.m. - 6 p.m. E.T.

®IBM, Ultimedia, PS/2 and OS/2 are registered trademarks of International Business Machines Corp.

™ES/9000 is a trademark of International Business Machines Corp.

All other company names and products are trademarks of their respective owners.

Prices and products in this section are subject to change without notice. References in this publication to IBM products and services do not imply that IBM intends to make them available outside the United States.

ULTIMEDIA®
Multimedia Solutions from IBM

IBM®

SAVE \$29



YES, enter my one-year subscription (21 issues) to CIO magazine and bill me later for only \$69, a savings of \$29 off the basic rate.

NAME

TITLE

COMPANY

ADDRESS

CITY

STATE

ZIP

The basic one-year subscription rate for CIO magazine is \$98.

This is a domestic rate only (U.S. and Canada) The foreign rate is \$185 U.S.

JJN94

**PROCESS
IMMEDIATELY**



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

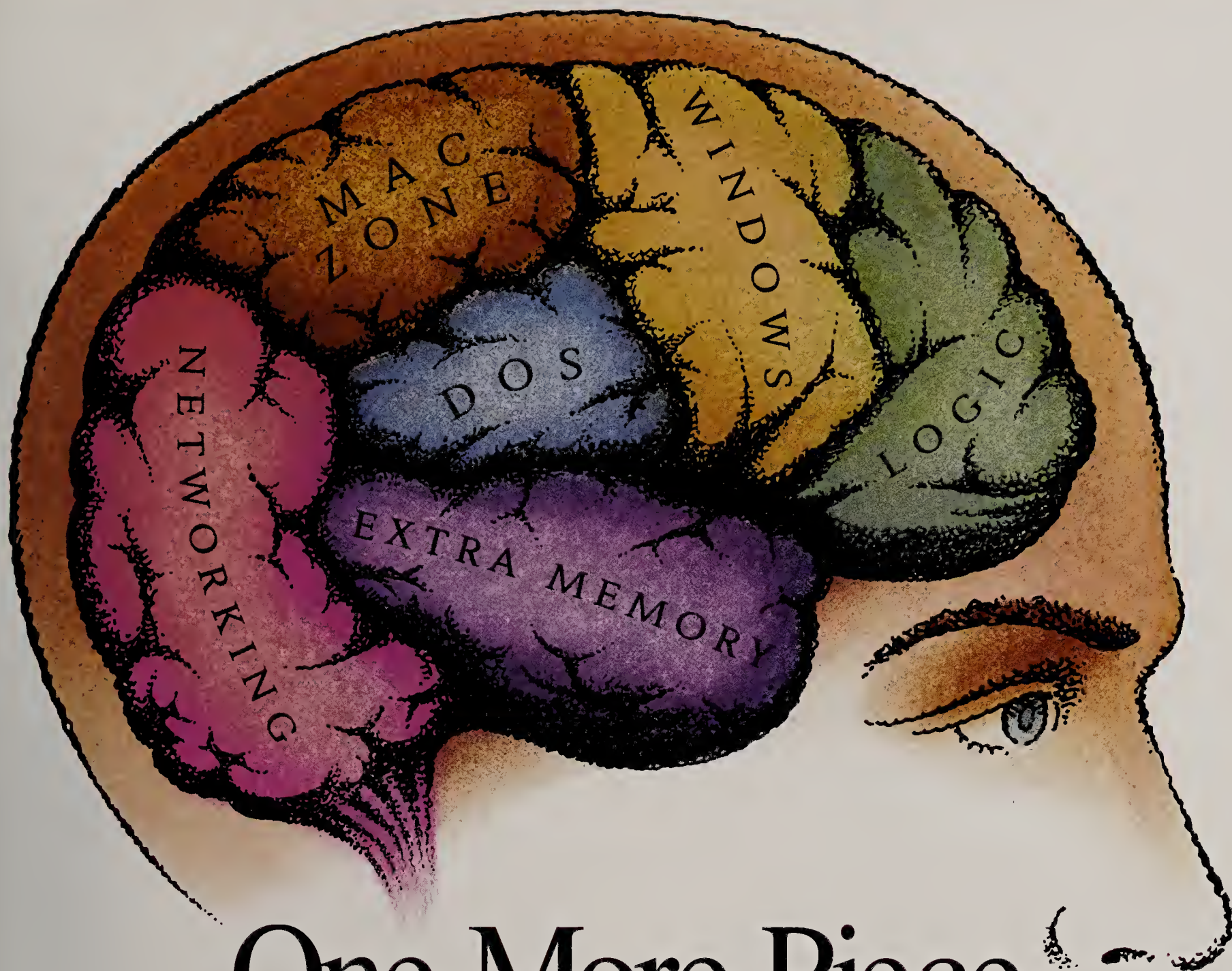
BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 1020 FRAMINGHAM, MA

POSTAGE WILL BE PAID BY ADDRESSEE

CIO Magazine
Attn: Circulation Department
P.O. Box 9208
Framingham, MA 01701-9486





One More Piece Of Software You Need To Upgrade.

You've upgraded just about everything else. Now make those technology investments really pay off by upgrading your people with the right training. All it takes is a call to ExecuTrain, the computer training leader.



Independent studies of ExecuTrain clients show one day of training can improve productivity 30%.

While millions are spent each year on technology in the quest for productivity, training is surfacing as the missing link to achieving greater

productivity and ROI. In fact, when an independently conducted study asked business decision makers about ways to increase productivity, more than 60% rated training as more important than business process redesign, networking, more powerful hardware and friendlier software.

Just one day of ExecuTrain training can increase user productivity 30% or more. And our unique, easy-to-understand courseware and outstanding instructors make it easy to pick up new

computer concepts. Best of all, ExecuTrain offers free, unlimited telephone support, more than 90 locations worldwide, and a money-back guarantee.

So make sure you upgrade the "software" that can make the biggest difference in your productivity. Call ExecuTrain today to Upgrade Your People.

 **ExecuTrain**
The Computer Training Leader

1-800-535-9479

A Process-Change **ALL-STAR TEAM**

When Tambrands Inc. embarked on a global reengineering initiative, it benchmarked internally to identify the best practitioners for each targeted process. These leading lights then reinvented their respective centers of excellence globally.

The trick to achieving growth in business is extending your reach without losing your grip. That's the lesson Tambrands Inc. learned several years ago, when it retreated from an unsuccessful foray into new lines of business and refocused on manufacturing its core product—Tampax tampons. Now the company is extending its reach another way—by concentrating on new and emerging foreign markets, where it sees great opportunities for growth. And this time it is keeping its grip on the business by streamlining and standardizing operations and

technology across the board. Tambrands' goals: to leverage the strengths of a single-brand company through uniform manufacturing and marketing operations, and to exploit the strategic potential of its financial systems through improved reporting and analysis.

The challenge for Tambrands, based in White Plains, N.Y., was to create a kind of corporate Esperanto that would allow a plant in Auburn, Maine, to perform the same processes in the same manner as a plant in Kiev, Ukraine. But unlike Esperanto, which is based on the lowest-common linguistic denominators, Tambrands wanted those pro-

cesses to be dictated by best practices as defined by the most efficient and effective parts of the company. The solution was to set global teams the task of identifying those best practices and then use them as a basis for reengineering functions globally.

"Our vision was that when it was all over, it was going to be like we were all in one building," explains Diane Forrest, vice president of information technology, who joined the company in 1987. "The first floor would be North America, the second floor would be Europe, the third floor would be our other international loca-

tions, and the top floor would be corporate."

BY LEIGH BUCHANAN



DIANE FORREST: *"When we get something up and running here in North America, the people in Europe already know what it is and when it's coming because they've participated along the way."*

Our vision was that when it was all over, it was going to be like we were all in one building. The first floor would be North America, the second floor would be Europe, the third floor would be our other international locations, and the top floor would be corporate.”

—Diane Forrest

A longtime denizen of the global community, Tambrands controls 45 percent of the world's tampon market. The company has manufacturing plants in seven countries, including France, China, Ukraine, Ireland and the United Kingdom. The disparity of these locations, which operated largely independently throughout the '80s, was hurting the manageability of an organization that was already suffering from high costs and the fallout from its failed diversification into cosmetics and pregnancy-testing kits.

That's how things stood in 1989, and the IS department was in no position to improve matters. Stashed away on the ground floor, across from the cafeteria and next to the computer room, “we were segregated from the rest of the organization, and it was a real struggle to participate in business conversations,” says Irwin Zaetz, vice president of North American IS.

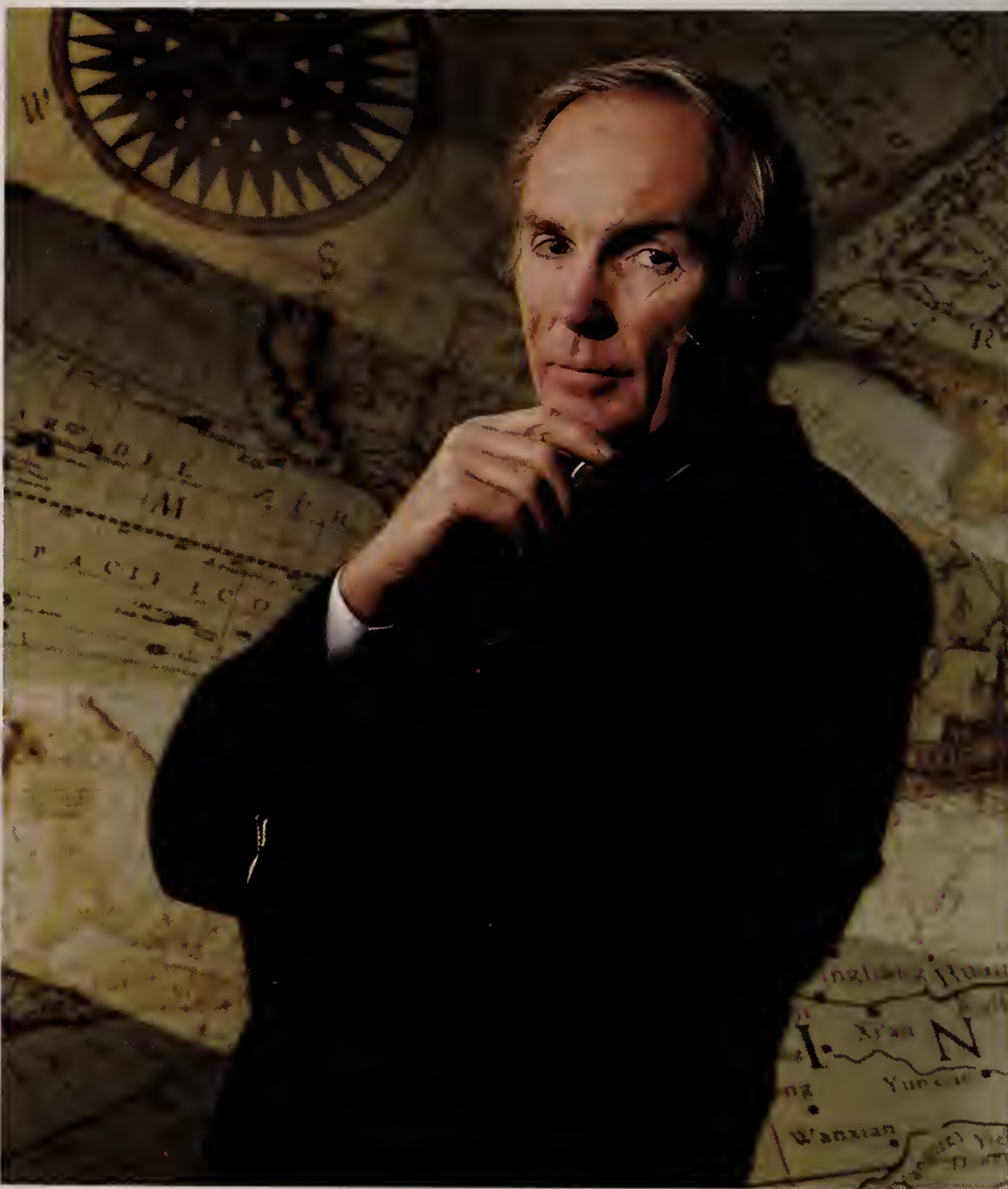
Enter a new management team, led by CEO Martin Emmett. Emmett left Tambrands in June 1993, amid reports blaming the company's marketplace setbacks on a series of price hikes he initiated. (Tambrands lost market share to Playtex Prod-

ucts Inc.; Personal Products Co., a subsidiary of Johnson & Johnson Inc.; and Kimberly-Clark Corp. in the first half of 1993, but regained ground at the close of last year. The company insists that its products remain competitively priced, and managers have blamed insufficient advertising for its troubles.)

Emmett's early days were more auspicious: In his first six months at Tambrands he slashed costs, refocused the company on its core business and created a new emphasis on information technology, engineering

“There was a perception that [prior to the arrival of the new management team] what we had in terms of information technology was being stifled by management above Diane,” says Wright. “There's an expression I like: You can't push rope. That's what Diane was trying to do, and without someone on the other end pulling, she wasn't getting anywhere.”

Together, Forrest and Wright began putting into place a long-range strategy for using IT to support a shift from independent, country-cen-



CHARLES CHAPMAN says fixing financials was Tambrands' top priority.

and R&D. And while Emmett himself was not particularly knowledgeable about IT, he hired people who were, including CFO Ray Wright, a former IS executive at Nabisco, to whom Forrest reports.

tered groups to an integrated global organization. What they had to work with was a patchwork of geographic divisions that used largely the same hardware but different software and operating procedures. The plan was

to pool the company's technical and knowledge resources worldwide and—over three or four years—implement standard business systems in all locations, including common coding structures, performance metrics and business definitions. The task was simplified by the fact that Tambrands has only one product line, which is packaged almost identically worldwide. The question, then, was how to select the standards.

At the same time Forrest and Wright were envisioning the future of IS, all Tambrands employees and senior managers were steeping themselves in the religion of best practices as part of a total quality management program. A group in manufacturing came up with the idea of using internal benchmarks as a basis for reengineering when an IS team working on logistics began comparing processes in different plants and discovered large disparities in cost and effectiveness. "They realized that by communicating and taking measures across locations, we could take the best practices from everywhere and move them across the board," says Forrest.

Things worked a little differently in the first area Tambrands chose to reengineer. The company's financial systems, running on AS/400s, were antiquated and strained by a rising volume of activity. They were able to churn out reports required by regulatory bodies, but they failed to provide the basic information that management needed for decision making, such as financial performance for markets and products around the world. In addition, reporting procedures for the different locations were many and varied, forcing corporate staff to personally visit sites in China and Brazil, for example, to review their procedures.



RAY WRIGHT and SUSAN RILEY'S financial group provides perspective on business issues.

"We didn't know what our cost structures were or how best to maximize return for the owners," says Charles Chapman, executive vice president at Tambrands and president of North American operations. Fixing financials "was our top priority and done on a whatever-it-takes-to-get-it-done-quickly basis."

So rather than benchmark within the company, Wright and Emmett established criteria for the new system based on their own experiences. Since the company had already made a substantial investment in hardware, they chose to concentrate on the software side: J.D. Edwards & Co., a software developer located in Denver, emerged as the vendor best able to handle both domestic and international requirements.

Beginning in 1990, Tambrands implemented a system that streamlined cost and profit-center reporting, allowing employees to look at key performance measures worldwide and use comparative information to redeploy resources. The new system has cut the company's worldwide closing time by more than half. In addition, the new system has enhanced the role of finance

employees, transforming them from number crunchers into analysts, says Susan Riley, vice president of finance, U.S. and Canada. "Systems helped financial people refocus such that they are no longer simply adding up numbers but rather are providing perspective on business issues," Riley says.

For manufacturing, however, where the need for speed was not so great, internal benchmarking made sense. Because the company had operated in a decentralized way for so long, things like product specifications had evolved differently in different locations. "It's very easy to build systems around these differences," says Chapman, "but it's much sounder and much smarter to ask why those differences exist, make them go away and then put the system in place."

Teams consisting of IS staff and users began benchmarking everything: inventory systems, productivity per employee, number of duplicate items, purchase prices, cost of production. With the help of the newly integrated financial systems,



GORDON EBANKS (from left), ROBERT BLOOM, LARRY KRIEB, MEL THORNE, FRED PFISTERER and IRWIN ZAETZ: *The IS team at Tambrands.*

they gathered data from plants worldwide. Together with consultant CAP Gemini America, headquartered in New York, the company then evaluated manufacturing automation plans using the internal and external metrics arrived at by the benchmarkers. Less formally, employees at disparate plants shared information on practices in their own locations to see which plants were producing the best results.

Because Tambrands lacked an E-mail system until last year, the teams communicated by fax, telephone and written reports. Members at some locations even made videotapes for their fellow benchmarkers, demonstrating how they

had successfully changed processes on the line.

Once best practices had been identified, corporate IS used local business needs to determine which sites would kick off which portions of the reengineering project. For example, a site where customer-order processing was the most urgent priority would be responsible for that process. A "lead team" was then created at each site and charged with using the new standards to reengineer the process locally. That team would then oversee transfer of the new process and any enabling technology to other Tambrands sites.

"What we said was, 'You're the center of excellence for a specific

business process. You have responsibility for how this process is going to work at Tambrands,' " says Forrest. " 'Corporate is going to learn how to let go and let you make the decisions. Then when you're finished, you'll bring the new system and processes over to other locations, and they will take ownership.' "

The company decided to begin its efforts in Europe and the United States, then roll out the new systems and procedures to farther-flung locales. After studying operations in both places, management directed Tambrands' European division to reengineer manufacturing processes, the area of greatest urgency to that region. In the United States, the

customer side of the business was considered most pressing, so the U.S. division was directed to concentrate on order processing.

Both U.S. and European teams work closely with those employees across the Atlantic who will receive the fruits of their labor. This ensures that all solutions incorporate the requirements of both locations. "When we get something up and running here in North America, for example, the people in Europe already know what it is and when it's coming because they've participated along the way," says Forrest. "The North American team then delivers it to Europe and helps them start it, but the receiving team is responsible for physically putting it in and supporting it."

While the objective is to make U.S. and European operations as close to mirror images as possible, Wright warns against a "cookie-cutter approach to globalization." Room for variation must be allowed if, for example, a preferred product is not available in all locations or a vendor in one country charges exorbitant fees. "As long as we've all agreed on a level of functionality that we require, the actual product need not always be the exact same," says Robert Bloom, manager of telecommunications.

Allowances are also made in countries where human-resources and technological limitations necessitate them. When the company decided that sites in China and the former Soviet Union were not large enough

to warrant the use of AS/400s, for example, Tambrands compromised with PC LANs. In Kiev, where most people are trained in local accounting practices that bear little resemblance to U.S. and European models, the company installed SCALA, from a Swedish company named Beslutsmodeller. That product allows employees to use local methods and then translates their results into the language of Western accounting. But

"We have the capabilities now to bring improved products to market with a higher level of marketing support, while still delivering a much-improved level of profitability. That would not have happened had we not embarked on these projects."

—Charles Chapman

these are interim solutions; Tambrands has deployed experienced people in these countries to bring local workers up to speed with the rest of the organization as quickly as possible.

Perhaps the best example of the Tambrands approach is the company's ongoing implementation of a comprehensive business-management system. A U.S.-European team of users and systems people determined what functions the software would have to perform and narrowed down the selection to three vendors. Then a team of more than two dozen Tambrands managers, including senior representatives from all the functions that

Doing the Right Things

Eleven keys to global reengineering

Assign process owners for every major initiative from both the user and systems organizations, with equal responsibility for the effort's success.

Give each major division responsibility for leading the implementation of a key application so that all buy into the global strategy and have an equal stake in its success.

Select lead sites for specific business functions with an eye to local business priorities.

Form cross-functional project teams that include representatives from key user and systems groups within each division. This will ensure that the lead location considers all requirements and agrees to global business definitions and data structures.

Establish common performance metrics wherever possible so that groups can learn from one another.

Use technology to facilitate communication among locations.

Evaluate business practices across locations so that the best ideas can come into play when reengineering a specific business process.

Establish a cross-functional review committee representing systems and user senior management.

Expect that cultural differences will initially complicate communication. As the teams become comfortable with one another, the common goal will transcend their differences.

Establish an issues database where teams record issues and solutions.

Ensure that a local owner is responsible for the success of the local installation.

would be using the system, visited the candidates' places of business over a period of about two weeks. During that time they interviewed middle and senior managers about their companies' products, strategies and willingness to enter into a business relationship with Tambrands. Meanwhile, subsets of the teams that had established the requirements visited the vendors' customers to hear their feedback.

The management team settled on PRISM from Marcam, a company in Newton, Mass., specializing in consumer-goods and process industries. A cross-geographical team of IS staff and users was then formed to implement the system. A certain degree of miscommunication, as well as regional and functional prejudices, made the going rough at first. Forrest, who was particularly concerned that the project not be IS-driven, had to practically force the users to take charge. But finally, "business interests transcended our differences," she says, and a team culture began to emerge.

The U.S. segment of the team initially concentrated on a resource-management system for finished-goods inventory. Under the old system, inventory transactions were forwarded to the customer-service department headquartered in Palmer, Mass., for processing, thereby causing delays and discrepancies. As part of the PRISM implementation, such transactions are now entered by employees at the locations where they actually occur, moving responsibility for accuracy into the distribution centers and plants and eliminating a two-day bottleneck in the information flow. The system was completed in 1992 and delivered to a Tambrands plant in Tipperary, Ireland, later that year. In addition, the Tipperary plant has since expanded the

system to include raw materials—specifically fiber.

Meanwhile, a Tambrands plant near London was addressing manufacturing concerns with, among other things, a scrap/reject-reporting system that enables laborers to record information about a product's weight, absorbency and reason for rejection right from the shop floor, using bar-code readers and touch screens. The U.K. team has also revamped the plant's complex control procedures to establish a single point of data entry, dramatically reducing the time spent reconciling balances and increasing inventory accuracy to 99 percent. While that piece came

TECHNICAL PROFILE

Founded in 1936, **Tambrands Inc.** is a leading manufacturer and marketer of feminine-hygiene products, with sales in over 135 countries and manufacturing facilities in countries including the United States, England, Ireland, France, China and Ukraine. The most recent figures available show net earnings of \$23.8 million on sales of \$161.4 million for the quarter ended Sept. 30, 1993. The worldwide IS organization has a staff of about 75 people.

Mid-Range Systems: Between 1990 and 1992, all AS/400 processing was consolidated into two data centers in Europe and the United States. The European data center operates with two IBM AS/400 Model E60s. The U.S. center operates with two IBM AS/400 Model E60s, a Model B50 and a Model B45. Further consolidation of processing within the U.S. center is planned for 1994.

Software: The global standards for AS/400 business systems are J.D. Edwards & Co. Financials; Marcam PRISM manufacturing, order-fulfillment and maintenance management; and Silvion Sales Tracker. Locations relying on LAN-based applications are implementing SCALA, a fully integrated business system from a Swedish company called Beslutsmodell.

End-User Computing: End-user tools include Lotus 1-2-3, WordPerfect and Harvard Graphics. IS recently completed the rollout of Windows and BeyondMail's E-mail package. A joint user/systems team is in the process of selecting the Windows suite that will serve as the company's standard spreadsheet, word processor and presentation tool.

Infrastructure: LANs rely on the Novell Inc. operating system and token-ring topology running over unshielded twisted pair and fiber. Wide area networking for data utilizes standard dial-up and T1 lines. Company standards also include Northern Telecom Meridian private branch exchange (PBX) and voice-mail systems as well as PictureTel videoconferencing.

over to the United States this year, the scrap/reject system has not yet been rolled out here. Forrest explains that the timetable for transferring projects is determined by the needs and priorities of the receiving site.

Most recently, a European team visited Tambrands headquarters in December 1993 to kick off the North American segment of the company's new manufacturing systems. The European group brought documentation of the systems and processes, which are designed to improve purchasing, materials-requirements planning and bills of material. The Europeans spent a week advising their U.S. counterparts; they will return at key points during the implementation to provide further support.

How much these changes will affect Tambrands' ability to secure new markets and regain some of its lost market share here is not clear. "It's a very, very tough market that they're in, and it's difficult to achieve significant product differentiation," says John Ruf, a partner at the New England Consulting Group in Westport, Conn. "If this allows them to become a low-cost provider, it should benefit them there."

Chapman, not surprisingly, is optimistic. "We have the capabilities now to bring improved products to market with a higher level of marketing support, while still delivering a much-improved level of profitability," he says. "That would not have happened had we not embarked on these projects."

What is not in doubt is the effect of the reengineering effort on IS. What had once been a lowly data-processing department "is now embedded in the fiber of the company," says CFO Wright. "There's been a real upgrading of status for IS. The sense is now that you can't do anything without them." **CIO**



Remind You Of Your Warehouse Management System?

Trade Up To The Ultimate Warehouse Management Software For The AS/400.

Meet the new Boss.

New CA-Warehouse Boss™ The software that can improve your bottom line.

It's the only totally integrated warehouse management software that enables everything you've got to work together – Scanners, RF, Conveyors, Pick-To-Lights, etc. The Boss is the "central nerve center" that tracks every detail from arrival through departure. It assures complete inventory accuracy



CA Warehouse Boss acts as a "central nerve center." warehouse into a real performer.

through cycle counting or physical inventory. And advanced pick planning, such as batch wave or order pick, optimizes your labor usage. So customers get the right orders. Every time.

The Boss is built using an advanced architecture so it can grow with you without costly custom programming.

Call 1-800 CALL CAI
Ext. 150 for more information
and a free Demo Disk of the
software that can turn your



COMPUTER ASSOCIATES
Software superior by design.

New CA-Warehouse Boss™

© Computer Associates International, Inc., One Computer Associates Plaza, Islandia, NY 11788-7000.
All product names referenced herein are trademarks of their respective companies.

READING THE IT LEAVES

Businesspeople are clamoring for tools to help them interpret sales and market data. Many IS shops are stumped by how to fill those requests. Some observers say that's because IS is stuck within a transaction-

processing framework, and online analysis processing (OLAP) is a new kind of problem, requiring different technology approaches.

BY MICKEY
WILLIAMSON

THE I.S. VICE PRESIDENT HAD BARELY BEGUN explaining the technical issues that had to be resolved before he could purchase an application when the company president interrupted him. "You don't understand your job, do you?" he said, according to Jeffrey P. Stamen, president of IRI Software. "You see this guy?" the president asked, pointing to the vice president of sales, who was also in the room. "He's your customer. Make him happy. That's your job. All these things you're telling me are your problems. I don't want to hear about them. This guy saw something that solves his problem. You figure out how to make it work. End of discussion." The system went in within a week.

At issue was a sales-analysis application that the sales VP had requested several months before. Preparing to introduce a new product line, "sales wanted a system that would help them better understand their customers—who is buying and who is not, and where the opportunities are. IS was busy being what I call systems police," says Stamen, who spent three years as CIO of Chicago-based Information Resources Inc., a provider of point-of-sale data and information services and software, before taking charge of the software subsidiary in Waltham, Mass. Instead of addressing the business need for the application, the IS staff spent its time asking questions related to standards and interfaces.

What had the IS department stuck was a new category of application, dubbed online analysis processing (OLAP) by E.F. Codd, founder of the database consulting firm Codd & Date in San Jose, Calif. Many CIOs have difficulty differentiating between online analysis processing and the more familiar online transaction processing (OLTP) applications, says Jiri Nechleba, senior vice president and general manager of software and systems for IRI competitor Nielsen Marketing Research, of Northbrook, Ill. OLTP's focus is on adding, changing and deleting data; by contrast, OLAP selects from and summarizes existing data, Nechleba explains.

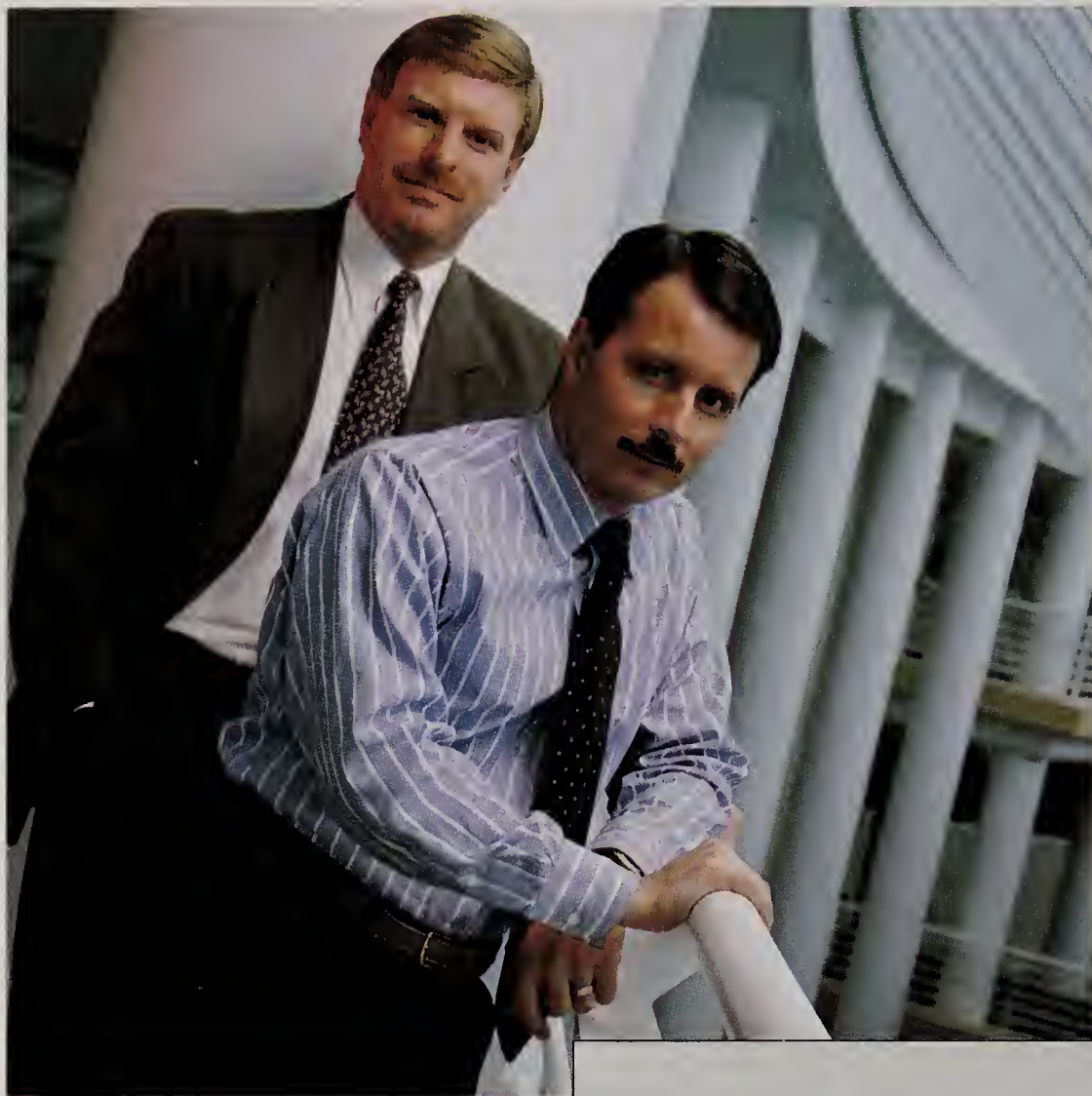
A black and white photograph of Jeffrey P. Stamen, a man in a dark suit, white shirt, and patterned tie, standing on a modern staircase with a white railing. He is smiling and looking towards the camera. The background is a large, curved wall with a diamond-shaped glass pattern, reflecting light. The overall tone is professional and sophisticated.

JEFFREY P. STAMEN

"Most CIOs...don't really know what a marketing analyst, brand manager or financial modeler does."

ONLINE ANALYSIS PROCESSING (OLAP)

OLAP is a way of looking beyond transactions to the forces driving them. It can help companies accurately forecast sales in order to better plan inventory and production levels, know where advertising is working and where they're wasting millions of dollars, and determine if their products are correctly priced. Supporting the most sophisticated OLAP applications are massive databases of timely point-of-sale data on the performance of a company's—and its competitors'—products. Front-end tools enable users to quickly and easily assemble and model data in an ad hoc fashion. Some CIOs have found uses for OLAP beyond marketing analysis.



JEFFREY KEISLING (left) and JOSEPH SCODARI: *Ease of use is paramount.*

"OLAP databases tend to have a business perspective on the data rather than OLTP's systems perspective," adds Howard Dresner, program director at the Gartner Group, in Stamford, Conn. "They're inherently different in every way." Rather than just looking at how many sales the company made, for example, OLAP provides the capability to see what the company did to stimulate those sales and to compare that with what its competitors did. For instance, a marketing department could look at its promotions in a particular market and see what return the company was getting from them compared with what its competitors were doing in that same market.

To Nechleba, OLAP represents the "new paradigm" of doing business. Instead of the conventional hierarchical structure, in which decisions are made at the top of the organization based on data collected from OLTP applications, the trend

now is toward what he calls organic management. "It brings people with different perspectives and information together for a moment to solve a problem," he explains. "Then they disperse back to their organizations. In this fast-moving age, decisions have to be made at a much faster pace."

And they must be made by people as close to the problem as possible. "As the next century approaches," Dresner wrote in a 1993 report, "instead of a small number of analysts spending 100 percent of their time analyzing data, all managers and professionals will spend 10 percent of their time using business-intelligence systems," Dresner's term for analytical-processing applications. For an IS chief, this means a shift from consolidating data for a few people to disseminating data to many, says Nechleba.

That's not an easy adjustment for

On Beyond Marketing

When senior managers wanted a better way to look at manufacturing cost data, ConAgra's Robert Fine convinced them to expand their horizons.

After he equipped the marketing department with tools to analyze point-of-sale data, Robert Fine went one giant step further. "What people normally use as a marketing tool, we took as a tool to help manage our factories more effectively," explains the vice president of management information systems at ConAgra Frozen Foods, an independent operating company

of ConAgra Inc., in Omaha, Neb. "No one had ever done it before."

Fine purchased IRI Software's Express/EIS toolkit, which normally links to a company's market data. At ConAgra, however, a joint IS-manufacturing team built a system that uses it to analyze data captured in PRISM, a manufacturing application from Marcam Corp., in Newton, Mass.

Called AMR, for Advanced Manufacturing Reporting, the application allows manufacturing people to analyze data related to inventory, labor, production efficiencies, quality and resource planning. The initial stimulus to build AMR came from senior managers, who wanted a better way to look at cost data. Fine, believing that cost was only one of the problems, developed a diagram that showed manufacturing information as a wheel, with spokes representing an array of applications, including cost analysis, inventory and bill of materials. The hub of the wheel was the manufacturing database. With this drawing as the centerpiece of

most IS executives, says Stamen. "Most CIOs come from the operations end of the business and don't really know what a marketing analyst, brand manager or financial modeler does," he explains. "That's not their background and training."

So, while many IS shops puzzle over how to fit requests for analytical tools into the OLTP framework, decision-makers drum their fingers on their desks, waiting for their requests to be fulfilled. But OLAP tools do not need to be fully integrated with the corporate mainframe structure, many say. While it is necessary to extract data from the mainframe, that data is likely to be reorganized on a mid-size server, often in multidimensional databases that allow analysts to see, for example, sales by product, geographical area, customer and sales representative all at once. That's a far cry from the common practice among business

THE FIRST RULE FOR EVALUATING OLAP SOFTWARE IS THAT THE VIEW OF DATA MUST BE EASILY ROTATED, GROUPED AND REGROUPED.

analysts of rekeying data from printed aggregation reports into a spreadsheet.

(Although vendors other than IRI are beginning to address the analysis-processing problem, only IRI currently has a product, linked to massive volumes of point-of-sale data, that is now churning away for a variety of users; consequently, most of the user companies mentioned in this article are IRI customers. Nielsen Marketing Research ex-

pects to have a competing product out later this year.)

THE MAIN TECHNICAL CHALLENGES to doing online analysis processing seem to be database structure and data integrity. Codd & Date has defined 12 rules for evaluating OLAP software; the first is that the view of data must be easily rotated, grouped and regrouped. That suggests a multidimensional structure. But Dresner is a bit less sure. "I've had some lively debates with some clients... who are certain they can do everything with a relational database." In any case, organizations must eliminate definitions that may cause confusion in an OLAP application. Dresner says the average company may have as many as "six database definitions of the word 'customer.' One client, an educational organization, had four different ways of defining what a student was."



ROBERT FINE applied a traditional marketing tool to factory management.

his presentation, Fine sold the manufacturing unit on the wisdom of taking a comprehensive approach to creating the ability to do its own analyses. "If you just try to sell on a project-by-project basis, I don't think it ever goes anywhere," he says.

Business-process reengineering

was the first step, says Fine. It uncovered instances of redundant processes, but some people resisted the new way of operating. Consultants from IRI Software and IBM Corp., whose AS/400 computer would hold the PRISM database, helped develop the system. Respon-

sibilities among those vendors and the two ConAgra project managers sometimes grew vague, and that caused friction. Fine's role was to make the project run as smoothly as possible.

Fine estimates the cost of the AMR project at \$750,000. It could have been less, he says, if he had negotiated with Marcam a license for multiple factories, but he thought it would be better to start with one. While it's still "a little soon to tell," Fine figures the company will save \$750,000 a year in production efficiencies and reduced inventory and labor. Current plans call for installing the system at ConAgra's other factories, although some managers fail to see the value of having everyone use the same analysis tool.

Fine has his work cut out for him, but remains undaunted. "I really believe that MIS people have to be strong marketing people," he says. "If you don't talk the language [of business] well enough, it's very difficult to get anything sold."—M. Williamson

The nature of the user community—upper- and mid-level executives unaccustomed to working with computer programs—dictates that these systems be highly intuitive. When Rhone Poulenc Rorer (RPR) Pharmaceuticals, in Collegeville, Pa., developed its EPIC marketing analysis system (see related story below), it kept this issue up front. “The end users never have to touch a keyboard,” says Jeffrey Keisling, director of information systems. “It’s all mouse-driven.” The system is so simple to learn that Joseph C. Scodari, senior vice president and head of the North American Pharmaceuticals operation, mastered it during a one-hour flight between Philadelphia and Montreal, where he was scheduled to demonstrate the product to another division.

“I was given the laptop with the

data loaded on it and had not yet used it,” he recalls. “Playing with it on the plane, I started trying to determine why the growth of one of our products had begun to slacken during a particular period. I was

“ANYTHING THAT CAN FIND REAL ANSWERS IN DATA IS AN ENORMOUS ADVANTAGE.”

—Robert Drury

able, on that flight, to identify the events that led to the slowdown in growth. That formed the basis of my demo at the meeting.”

IS executives who have taken the plunge see many benefits in provid-

ing analysis capabilities to their in-house customers. Robert Drury, vice president of management information services at Pet Inc., manufacturer of prepared foods in St. Louis, installed IRI’s Brand Partner and Sales Partner applications in its marketing and sales departments. Brand Partner keeps track of such information as whether special displays are set up in stores in a retail chain or geographical market area, the price of each product, and in which areas advertisements have run.

Embedded in the application is an expert system that can inspect the data and come up with information such as the sales volume retailers can expect at a particular price. Sales Partner, Drury says, “acts as if it were a sales analyst and tries to understand what the best-selling strategies might be in each ac-

A Market in Motion

.....
The changes underway in health care are transforming pharmaceutical companies’ customer base. Appealing to a more fragmented market demands more sophisticated techniques.

Universal health-care coverage in the United States may not happen tomorrow, but there’s not much doubt that it will come about. Rhone Poulenc Rorer (RPR) Pharmaceuticals intends to be ready when it does.

“Physicians have traditionally been our primary customers,” says Jeffrey Keisling, director of informa-

tion systems at the Collegeville, Pa., company. Now, with doctors forming alliances with provider networks and various insurance groups, “we have to deal with hospitals, managed-care institutions, the Veterans Administration, insurance companies, hospital buying groups and cooperative buying groups.” With its customer base growing more diverse, RPR management has had to reexamine its marketing techniques.

Available sales data from pharmacy scanners and wholesalers “has been growing geometrically over the last three years,” says Keisling. “Our goal was to turn data into knowledge.” A cross-functional team of brand managers set out to create “micro-marketing programs, down to the level of the individual prescriber or purchase decision-maker,” says Keisling.

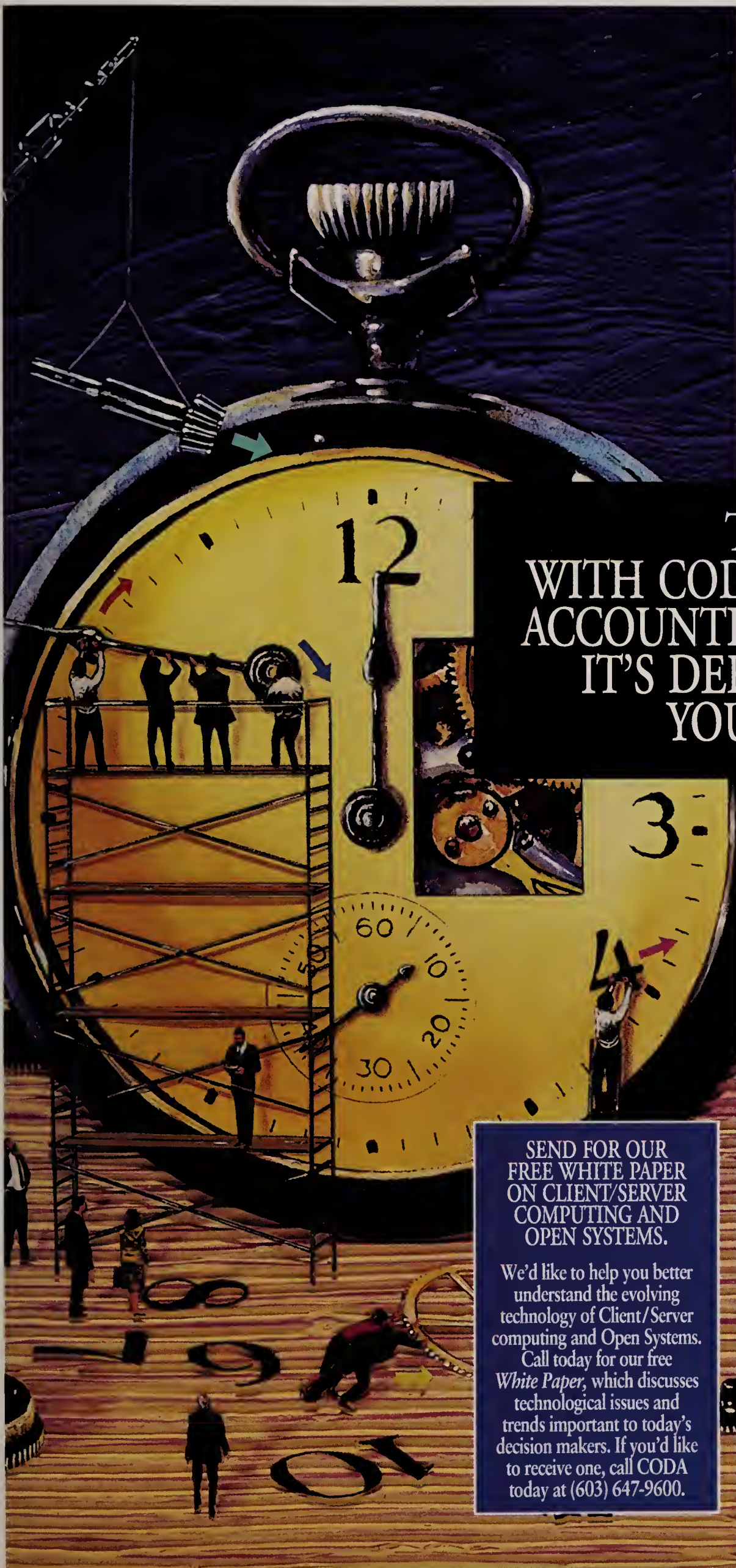
The answer was EPIC, short for Ethical Pharmaceutical Information for Competitiveness. (Ethical pharmaceuticals are prescription drugs.) Based largely on IRI Software’s Express EIS product, EPIC combines

decision support with a sales-forecasting system. About 70 people in the Ethical Pharmaceuticals and Dermatological divisions—from brand managers to the division presidents—currently use the product. Its total cost, including Windows-based 486 PCs, network components and consulting services, was just over a million dollars. Keisling reports that it’s too early to quantify benefits, although he’s sure they exist.

Other divisions are interested in EPIC, and Keisling is happy to respond. He is also looking at other uses for the system. “It’s not only for marketing,” he says. “It can play in manufacturing and financial analysis, too.”

Keisling has two pieces of advice for CIOs embarking on an OLAP project. First, “don’t start without an extremely strong, business-driven commitment.” And, he warns, when you form the project team, “there needs to be clear leadership from people on the client side who know what results they want to see.”

—M. Williamson



TIME. WITH CODA'S FINANCIAL ACCOUNTING SOFTWARE, IT'S DEFINITELY ON YOUR SIDE.

SEND FOR OUR
FREE WHITE PAPER
ON CLIENT/SERVER
COMPUTING AND
OPEN SYSTEMS.

We'd like to help you better understand the evolving technology of Client/Server computing and Open Systems.

Call today for our free White Paper, which discusses technological issues and trends important to today's decision makers. If you'd like to receive one, call CODA today at (603) 647-9600.

In financial accounting circles, there's a lot of talk these days about reengineering. About Client/Server technology. And about Open Systems.

It can be a bit unsettling. But at CODA, we're ready. In fact, our accounting software was designed to help financial executives thrive in today's changing corporate environment. How? By giving them instant access to up-to-the-second information. So they can make better decisions. Faster.

Unlike other accounting software solutions, ours is truly unified. So as soon as any transaction occurs, anywhere in the system,

everyone who needs to know about it is automatically updated. Instantaneously. This not only eliminates wasteful, redundant steps—such as batch processing—but also ensures that the information you're working with is always current, always meaningful.

What's more, CODA's solutions run in the world's leading technical environments, including Client/Server Open Systems, IBM AS/400, Digital and Hewlett-Packard. And we provide extensive international capabilities. Which is another reason over 1,000 major organizations worldwide use CODA in their financial accounting operations.

So don't waste any more time. Call CODA today at (603) 647-9600. We'll be happy to send you some up-to-the-second information.

CODA

CODA Incorporated
1155 Elm Street, Manchester, NH 03101
(603) 647-9600

Atlanta, Basingstoke, Brussels, Budapest, Calgary,
Chicago, Harrogate, Hong Kong, Los Angeles, Paris,
Manchester, NH, Munich, New York, San Francisco,
Singapore, Sydney, Toronto, Utrecht

count." Among other things, it helps sales representatives "make a fact-based case to convince the buyer that it is in the store's best interest to carry our brand instead of some other," or to provide more shelf space for a particular product.

Installing the applications did not take long. Pet signed the contract with IRI in March 1993; the application went live in August. Now Drury meets monthly with managers for the various product lines in what he calls "power melding" sessions, sounding a bit like a Vulcan on *Star Trek*. "We put four or five computers in the room and use Brand Partner to go after pertinent facts about the marketing tactics of our competitors," he says. "It's an interesting time, very intense."

Leasing the software costs about a half million dollars a year, Drury reports. Adding in the cost of buying POS data from IRI, he estimates the cost of the OLAP applications at \$1.5 million. "It's one way of outflanking our competition," he says when asked about benefits. "It's one of the reasons we've been successful in getting sales of our [Progresso] soup up 30 percent this past year."

Harry Wallaesa, vice president of MIS at the Campbell Soup Co. in Camden, N.J., is not one to be outflanked. His organization built a proprietary sales-promotion analysis system that runs on desktop and notebook computers and cost "in the \$5 million range." This expenditure was easy to justify in light of the company's massive marketing budget, and the application paid for itself in less than a year, Wallaesa reports. "It's become part of how we go to market."

SUCCESSFUL OLAP PROJECTS SEEM to have in common strong support from both senior management and the user community. IS took the lead at Pet, Drury says, by inviting IRI to demonstrate its OLAP tools to an audience from sales and marketing. It was an easy sell. Even though Pet is a \$1.8 billion company, "we have limited numbers of people, and there is so much data

to look at," Drury says. "Anything that can find real answers in data is an enormous advantage." At the outset, Drury obtained not only commitment but also a sponsor from each user department.

The IS organization at Campbell Soup had been trying to stimulate

being able to close your books earlier? What's the benefit of being able to come up with an accurate forecast of what's going to be sold, so that you can run your factories and financial and distribution plans rationally? What are the benefits of knowing where advertising is working and



ROBERT DRURY: Sales Partner "acts as if it were a sales analyst."

interest in OLAP by building prototype applications, but Wallaesa couldn't find a sponsor until David Johnson joined the company as CEO in 1990. "He became extremely interested in marketing productivity," Wallaesa recalls. "When you spend hundreds of millions of dollars a year on marketing activities, you'd like to get the biggest bang for the buck, so we were funded by the CEO." A team of people from IS, sales and marketing designed the system.

The benefits that come from turning masses of data into usable knowledge about the business and its environment can be startling, Stamen says. "What's the benefit of

where you're wasting millions of dollars? What are the benefits of knowing if your products are priced correctly?"

"The information business is like the oil-refining business," says Nechleba. "For a long time, all we did was sink drills into the ground and pump out data to store in a sea of numbers." It's no longer enough to aggregate OLTP data for analysis, he adds. "The real value is in the details. Giving people the tools to analyze them is what OLAP is all about." **CIO**

Mickey Williamson is a technical journalist based in Warwick, Mass.

LET US MAKE MOLEHILLS OUT OF YOUR INFORMATION MOUNTAINS.



We're MicroAge Infosystems Services — equipped and ready to implement your strategic information systems projects.

Whether you're automating your branch network or your sales force, we can take your project from start to finish — from system planning to implementation and support.

That's because with your MicroAge Infosystems Services partnership you have direct access to MicroAge's world-class configuration and distribution capabilities.

And to one of the industry's largest inventories of IBM computers. From mis-

IBM PS/2®
Servers And IBM
ValuePoint®
Workstations
Give You The
Power To Move
Mountains

sion critical to mainstream computing, IBM has the flexible, powerful system to meet your demands for years to come, including the full range of IBM PS/2 servers and ValuePoint workstations.

What's more, the national MicroAge Infosystems Services Network of owner-managed branch locations offers service and support that's local, responsive and consistent — anywhere you need it.

So if your information systems projects start to pile up, call us. We'll give you the power to make your information mountains into molehills.

CALL (800) 582-8397 TO LEARN HOW MICROAGE INFOSYSTEMS SERVICES
AND IBM WILL CUT YOUR PROJECTS DOWN TO SIZE.



MicroAge

INFOSYSTEMS SERVICES

Helping you work faster, better, cheaper



FINANCIAL AFFAIRS

Creaky old financial systems and badly organized accounting processes are taking their toll on managers' decision-making powers. Companies' efforts to reengineer the financial function are elevating it to new prominence.

BY CAROL HILDEBRAND

As reengineering becomes less a trend and more an imperative, the finance department looms large as an obvious target for reconstructive surgery. Instead of settling for a back office full of number crunchers, companies can refashion their finance departments into vital decision-support centers. In fact, recent surveys by Gartner Group and Forrester Research Inc. show that CIOs overwhelmingly favor finance as their top priority for business-process reengineering.

The prevalence of aging financial systems is one reason for this. Since finance was often the first function a company automated, many venerable accounting systems are now in desperate need of rehab. Reengineering's emphasis on IT-enabled process change means that a process-reengineered finance depart-

ment will be systems-reengineered. This can dovetail nicely with client/server migrations.

However, while technology is a major reengineering enabler, "CIOs are not going to decide where the reengineering is going to take place," says Mark M. Klein, managing director of management consulting services at New York-based Gateway Management Consulting. "It's really hard to drive these things from the supply side." He says that the IS department can be most effective generating excitement about reengineering in finance and elsewhere.

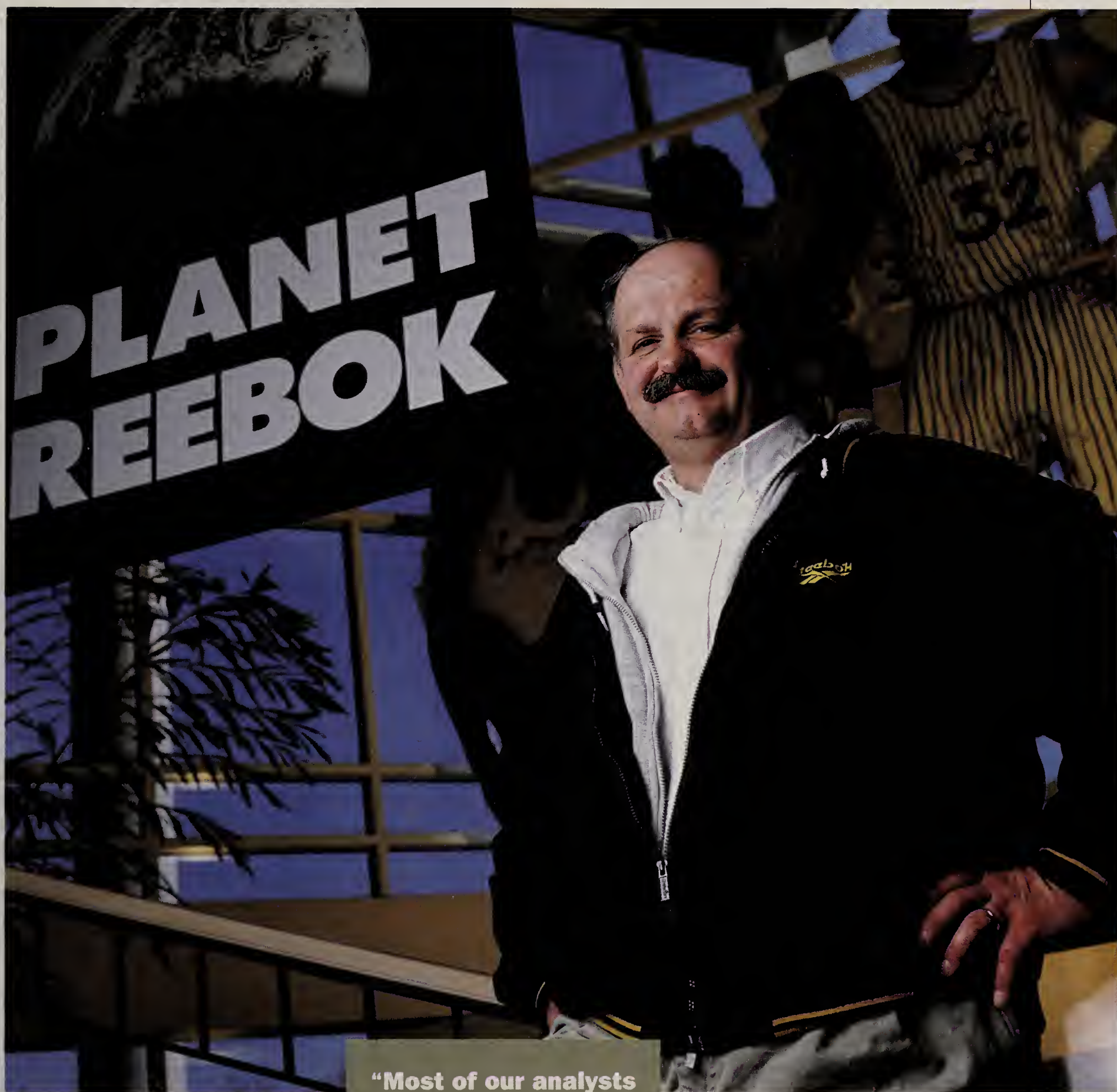
Admittedly, some of the interest in the financial organization may arise from political motives. With many IS executives reporting to CFOs, reengineering the financial process can be a golden opportunity to impress the boss, says Al Case, vice president for Gartner Group's

application development and management services. Conversely, the impetus might flow in the other direction, with CFOs badgering their IS reports into starting a reengineering effort in the financial fiefdom.

Politics aside, there are compelling reasons to evaluate the financial process as a target for reengineering. More and more managers need financial information to make decisions concerning every aspect of the business—from choosing a marketing campaign to developing new products. But that information is not always available or complete. For example, financial analysts, swamped by monthly book closings, may not be able to get timely reports on executives' desks. When they do deliver the data, it is often in summary form—insufficient to meet management's need for detail.

Since the finance department's processes impact so many business units, any reengineering done in that department is bound to affect others. When it's done right, says Rita Terdiman, vice president of industry services at Gartner Group's Santa Clara, Calif., office, financial reengineering can have a positive impact on line business units as well.

But change that extends beyond departmental boundaries calls for increased cooperation among departments. And that demands a new way of thinking from financial executives, says Roger Pratesi, vice president at CSC Index Inc. in Cambridge, Mass. As an example of such cooperation, Pratesi cites Viacom International Inc., the New York-based parent of MTV, Nickelodeon and other entertainment interests. At that company, the CFO teamed with executives



**"Most of our analysts
don't have time to
analyze anything."**

—Peter W. Burrows

from sales, marketing and contracting to reengineer those departments' processes. "You think of finance and sales/marketing and you think of the Hatfields and the McCoys," Pratesi says. "But they put down their guns and worked for what's right for the customer and the business."

Because financial processes are so intertwined with the processes of other departments, redesigning fi-

nance should ideally be part of a companywide, comprehensive reengineering project. Although some turf wars are inevitable, executives involved in such large-scale efforts can often be persuaded more easily

to support cross-departmental process change, says Charlie Goldenberg, a partner at KPMG Peat Marwick. At Reebok International Ltd., which hopes to complete a mammoth corporatewide reengineering project by the end of 1995, one IS manager defuses conflicts by keeping departments focused on the greater good their efforts will bring to the customer (see related story, Page 64). Meanwhile, he is review-

PHOTO BY WEBB CHAPPELL

ing the financial organization with an eye toward making its employees more valuable to their peers in other parts of the organization.

Corporatewide reengineering will typically reap the most dramatic productivity gains and cost savings. But smaller projects—such as reengineering just the finance department, or even a process within that department—also have their rewards. Both Boulevard Bancorp Inc. (BBC) and Russell Reynolds Associates Inc. have completed reengineering initiatives within their finance departments, and both report significant paybacks (see related stories, Pages 65 and 66).

In determining the scope of their reengineering projects, companies' expectations should reflect how much implementation pain they can absorb, according to Rob Brewer, a senior manager in KPMG Peat Marwick's financial services consulting group. But as BBC and Russell Reynolds prove, if it meets expectations, "there's nothing in the world wrong with a good smaller project."

Reebok International Ltd.

Athletic-gear manufacturer Reebok International runs near the front of the pack in brand popularity. Nonetheless, its chairman has issued a public challenge to his employees: He wants the Stoughton, Mass.-based company to become the No. 1 sports and fitness brand in the world by the end of 1995.

To meet the challenge, top executives are reengineering the entire company, in the sense that Michael Hammer defines the word in his seminal text on the subject. The project, which started over a year ago, has identified more than 40 key processes within such megaprocesses as executive administration (which covers finance), R&D, production and logistics, marketing, and sales and distribution. As a result of those analyses, the company now faces the daunting task of implementing more than 150 potential projects in a short period.

In the context of such an overarching initiative, reengineering the financial processes is a relatively low-profile effort. Still, Peter W. Burrows, director of systems engineering at Reebok, says this is one area that affects almost every other group. "If you looked at the general ledger and did a data-flow analysis, you'd find that information comes from literally every function in the company," he says, including sales, marketing and R&D. Thus, any changes made in the process are likely to have a ripple effect.

For that reason, Reebok is trying to make sure that no process change occurs in a vacuum. The operations groups sit down with the systems people for visioning sessions, identifying opportunities for process improvements and technologies that may help. IS gathers opinions from both ends of the hierarchy in each group, "and then we do a reality check between the two," Burrows says.

The analysis doesn't stop there. Say that distribution's biggest problem is an antiquated billing system, a process that traditionally belongs to another department. Naturally, distribution can't fix the problem by itself. Instead, the owners of each part of the process must sit down together and work out opportunities for cross-departmental change.

Interdepartmental change can be tricky, as each group battles to defend its own turf. Burrows says he tries to defuse potential political bombs by focusing on the benefits each change will bring to the external customer. This approach—which places no blame for previous snags in a process—allows departments to lower their hackles and cooperate, he says.

The company also lessens the pain of change by making sure that a top executive from each operational unit is

working full time on the project. If no such executive is available, a consultant with commensurate experience will fill the bill. Burrows points out that if you don't get the business buy-in to reengineer, you run the risk of merely automating current processes. "You're not going to force out-of-the-box thinking if you can't free up people with business experience" to work on the project, Burrows says.

Reebok also has an executive-level steering committee that reviews the reengineering plan quarterly, as well as two user councils, one for domestic operations and one for international units.

And what is Reebok contemplating for financial reengineering? First, the company is looking for a



smarter way to handle the financial reporting of its wholly owned subsidiaries, which it is acquiring at the rate of about three yearly. Another goal is to clear paper off accounting desks. "Almost any process in the financial group involves rekeying, rechecking, doing accruals," Burrows explains. "It's all paper-intensive. What's really promising is the idea of doing electronic workflow. Instead of passing paper, you'll be passing the transaction."

Eventually, Reebok wants to shorten the time it takes to close its books so that the financial group can spend more time analyzing the data and getting it to managerial desks. "Most of our analysts don't have time to analyze anything," Burrows says. Giving them that time is one of

the biggest improvements the company could make.

Boulevard Bancorp Inc.

Boulevard Bancorp (BBC) embraced financial redesign as a way to speed its recovery from some lean years, caused in part by the real-estate woes of the late 1980s. The \$1.7 billion four-bank holding company hoped to reap gains from economies of scale and increased productivity.

The reengineering effort at Chicago-based BBC took place mainly within the financial division. But it had enough backing from top management to affect processes in other business units as well. In fact, in some cases, the finance department took over functions—accounts reconciliation, for example—from the operational units.

Ron Bond, vice president and controller of Boulevard Technical Services (BTS), was hired in 1989 to streamline operations at BTS, a centralized administrative operation for Boulevard's four banks. Operating from a central data center, BTS handles accounting and financials as well as auditing, marketing and human resources.

But while the accounting department was centralized, the methods used to process each bank's books diverged significantly. BBC had acquired the banks at different times and never standardized accounting procedures or systems. As a result, the two

larger banks processed their books in-house, on separate systems and using customized versions of the same software. Meanwhile, the smaller banks sent theirs to two different service bureaus. Moreover, each bank's chart of accounts was different. Thus, an accountant mov-

ing from one bank's books to another's would have to learn different names for the same type of account.

For Bond to capitalize on the economies of scale available to a centralized organization, he first had to straighten out this tangle of systems and processes. That imperative was heightened by the need to cut costs and bolster BBC's bottom line.

Having decided that outsourcing all the company's processing to a single vendor was the best way to save money, Bond chose Systematics Inc., of Little Rock, Ark. He started the move toward standard processes by converting all the banks to common software, a financial-accounting package from the same company. That process took about a year-and-a-half.

At the same time, Bond began analyzing the corporation's financial processes. His goal was twofold. First, he wanted to make sure that accounting processes were standardized across all the banks. Second, he wanted to redefine employee responsibilities to ensure maximum efficiency so that, for example, the same clerk wasn't handling loans for one bank and fixed assets for another. At the time, "nothing in one function could be leveraged in the others," he says.

The analysis took about nine months; implementing the results took more than a year. One reason for the lag: Bond needed to pull certain processes out of the business units and into the finance department. That resulted in some turf wars. For example, at most firms, line business units reconcile the books, but Bond wanted finance to control the process at BBC. He got it, "but the negotiation process went up to very high levels," he says.

By standardizing procedures and software, Bond was able to cut about six days out of the 20-day closing cycle. But one important bottleneck remained: financial reporting. "Our managers were starved for information," he says. "A mainframe makes a great debit/credit machine, but it had significant shortcomings in its financial- and management-reporting



"I like to think that the company started turning profits in some part because we could give our executives better information."

—Ron Bond



Eventually, the company had full accounting departments at its U.S. headquarters and eight international locations.

"It was inefficient, to say the least," says Roger S. Pierce Jr., director of international finance at the New

**Profit-center results
needed to be
compared on an
apples-to-apples basis
using universal
definitions and
standards.**

—Roger S. Pierce Jr.

York-based firm. So his unit embarked on a two-part project to ensure that all locations spoke the same accounting language. In the process, it cut the company's finance-operations overhead by almost 20 percent.

The toughest problem Russell Reynolds faced was conforming to the regulatory climates of each country. Taxation and other legal requirements vary widely, even among European Community nations. To complicate matters further, each international location reported its monthly data in the local currency and in whatever form it found most convenient—using a local accounting package, say, or a piece of paper covered with figures. In addition, the international offices reported their financials only in summary form, making it difficult for analysts at headquarters to use the information.

Starting in 1990, Pierce and his group determined that profit-center results needed to be compared on an apples-to-apples basis using universal definitions and standards. So they designed standard accounting procedures that conformed to both international and U.S. regulations. Then

capabilities."

His financial-reporting group had been working with almost 150 different Lotus spreadsheets to create monthly reports, rekeying data for each one. Bond moved the group on to a client/server platform and gave them financial-reporting and -analysis tools from Comshare Inc. of Ann Arbor, Mich.

Now generating reports involves almost no data entry, and financial-reporting employees can set up tools to extract the necessary data from the mainframe overnight. "My people now get the opportunity to do financial writing and analysis rather than just crunching numbers," he says. Bond's group can close the monthly books and generate management reports in five business days, and the year-end and quarterly closings are equally painless.

BBC's enhanced profitability attracted a suitor: First Bank Systems Inc. of Minneapolis recently purchased the company. "I like to think that the company started turning profits in some part because we could give our executives better information," Bond says.

Russell Reynolds Associates Inc.

Money, as the saying goes, is a universal language. Unfortunately for executive-search firm Russell Reynolds Associates, the rules that govern international accounting practices are not nearly so consistent.

As the company grew globally throughout the 1980s, opening 22 offices in countries from France to Singapore, its accounting system grew correspondingly complex.

in 1992, the group began standardizing the company's accounting departments on software from SunSystems. (So far, all European and Asia Pacific offices have been converted.)

Pierce also has all the company's divisions using the same chart of accounts, which meets U.S. accounting principles. "Everybody pigeonholes expenses, income, assets and liabilities the same way," he says. This uniformity lets the international finance unit get such detailed information as how much individual recruiters are spending on rental cars.

With all the international accounting departments using standard procedures, Pierce's group began examining those procedures in greater detail to see what could be simplified. Previously, for example, an international expense report went through eight different steps between when it was submitted and when it was paid. Now, an automated billing system has cut that in half.

The standardized procedures also let the group consolidate some of the company's data centers. The five accounting departments in Europe have now been consolidated into one in London, enabling Russell Reynolds to cut personnel costs and benefit from economies of scale. And, Pierce says, "because they all use the same types of processes, we did not need to expand the London center." Pierce is now moving processing for the Asia Pacific offices to New York.

Streamlining internal operations has prepared the international finance group to meet its next challenge, Pierce says: responding to a new companywide business-reengineering initiative that began shortly after Pierce's group finished its European effort in mid-1993. Pierce says that his unit will probably switch in the next six months to activity-based accounting, in which a company bases its financials on business processes rather than geographic districts. Although the companywide reengineering project will mean still more changes, Pierce thinks that his group's internal effort will make those changes easier to take. **CIO**

Client/Server Financial Software

What follows are a number of major offerings. This list is not meant to be all-inclusive.

VENDOR	PRODUCT
Coda Inc. Manchester, N.H.	Open IAS
Computron Inc. Rutherford, N.J.	Epic
Collier-Jackson Tampa, Fla.	VisionShift
Concept Dynamic Schaumburg, Ill.	CDI Financials
The Dodge Group Waltham, Mass.	*Open Financial Series
Dun & Bradstreet Software Inc. Framingham, Mass.	Financial Stream
FlexiWare Corp. Shelton, Conn.	FlexiFinancials
FourGen Software Inc. Seattle	Enterprise
Great Plains Fargo, N.D.	*Dynamics C/S+ and Corporate Dynamics
IMRS Stamford, Conn.	*Hyperion and Hyperion Financials
J.D. Edwards Denver	*Not yet named
Kapre Software Inc. Boulder, Colo.	Kapre
Lawson Software Corp. Minneapolis	Open Enterprise
Oracle Corp. Redwood Shores, Calif.	Oracle Financials
PeopleSoft Inc. Walnut Creek, Calif.	PeopleSoft Financials
Platinum Software Corp. Irvine, Calif.	Platinum-to-Sequel
Ross Systems Inc. Redwood City, Calif.	Renaissance CS
SAP America Inc. Lester, Pa.	R/3 Financials
Software 2000 Hyannis, Mass.	*Not yet named
SQL Financials Atlanta	SQL Financials
* Expected this year SOURCE: INTERNATIONAL DATA CORP.	

Be Prepared

The question isn't whether your company is likely to be hit by a disaster, but what you stand to lose when it happens. The answer—profits, opportunities and customers—should send CIOs scurrying to draw up recovery plans.

BY JOHN EDWARDS

As the World Trade Center bombing, the Los Angeles earthquake and Hurricane Andrew graphically proved, disaster can strike any company, anytime, anywhere. With businesses rapidly shifting their information focus from large mainframes and minicomputers to client/server networks, many companies are finding themselves in the position of distributing the impact of a disaster along with their usual data.

In the past, companies could often limit a computer outage's effects to IS operations or perhaps a handful of staffers. But in today's desktop-driven world, even a single outage caused by a relatively minor event can effectively halt work across the enterprise. A larger calamity can shut down a business's information resources for hours, days or even longer.

Disasters take many forms, and each presents its own set of conditions and problems. But most catastrophic events fall into one of three broad categories:

■ **Natural disasters** such as earthquakes, hurricanes, tornadoes, ice

storms, snowstorms and floods.

■ **Infrastructure disasters** such as telecommunications failures, electrical outages, water-main breaks, fires and civil unrest. (Such calamities generally, but by no means exclusively, hit larger cities with aging infrastructures and large populations.)

■ **Operational disasters** such as hardware and software problems, computer viruses, procedural problems and human errors.

Over the years, organizations have dealt with the specter of disaster in many ways, sometimes resorting to drastic measures. For example, San Francisco-based Levi Strauss & Co. plans to move its computer center from the Bay Area to Dallas this summer to eliminate the possibility of a major earthquake disrupting its corporate information flow. But companies seeking geographic cures for disaster exposure may be trading one potential cataclysm for another—an earthquake for a tornado, say, or a hurricane for a wildfire. And in the case of Levi Strauss, the company's headquarters (with its many networked desktop computers) will remain based in earthquake-prone San Francisco.

There's no substitute for thorough disaster planning, says Josh Dayanim, manager of product development for SunGard Recovery Services Inc., in Wayne, Pa. And businesses' increased reliance on client/server technology and finicky leading-edge products makes advance planning more critical than ever.

"Profitability is at the core of any disaster-avoidance and -recovery plan," Dayanim says. "It's not the odds that should be considered, but what is at risk if disaster does strike." According to Dayanim, CIOs should ask themselves the following questions when developing disaster-recovery plans:



We'll work with Apple, IBM, Microsoft, and if we have to, your Uncle Fred.

We're extremely flexible. Not only will we work with Mr. Couch Potato, but a ROLM phone system will also work in virtually any PC, mainframe or LAN environment.

Environments that include such well-known manufacturers as Digital, Intel, Novell and Tandem. Just to name a few.



ROLM is part of the Siemens family, the world's largest private communication systems manufacturer. We have the technology to let you work with anyone worldwide.

Why are we so sociable? You see, at ROLM, we have always believed in interoperability and global standards. So you'll get the most out of every single dollar you invest in communications technologies.

Take Nissan Motor Acceptance Corporation, for example. To help them handle over two million calls each month, they installed a new ROLM phone system with a voice response unit (VRU)

that was integrated with their IBM mainframe. Now, over 30 percent of all their calls are expedited by the VRU and their call times are

actually 20 percent shorter.

And as a result of this

combined technology, interaction with all their dealers and customers has been greatly enhanced.

If you'd like to see how we've been able to help companies just like yours get more from their phone system, call the number below. We'll be glad to send you a compendium of success stories that will show you how it can pay to work with just about anyone in the world.

Yes, even good ol' Fred.

ROLM

A Siemens Company

1-800-ROLM-123 ext. C101

- What will an outage cost in lost revenue?
- What will happen to the firm's competitive position?
- What will be the impact on productivity?
- How will suppliers and creditors be affected?
- How will an extended outage affect stockholders?

Insurance may compensate for building damage and, perhaps, direct revenue losses. But when operations grind to a halt, the consequences—lost profits, lost opportunities and lost customers—can devastate a company's financial health.

The significance of advance disaster planning hit Jan Hedrick, a network administrator at Kansas State University in Manhattan, Kan., like a thunderbolt. In fact, the message was delivered by a stroke of lightning that set fire to the building that houses the university's news services offices.

Prior to the disaster, Hedrick oversaw a small but essential network of 14 Macintosh computers, five printers and numerous attachments, including a scanner. Hedrick still manages the network, but the fire and resulting water damage changed its configuration forever.

"When we arrived on the scene, we saw ankle-deep water and plenty of devastation," recalls Hedrick. The firefighters, in an effort to be helpful, had dumped plastic sheeting over the equipment. Unfortunately, the material's weight activated several power strips, as well as the connected equipment, damaging or destroying several thousand dollars' worth of hardware.

Hedrick's first priority was to restore service to the department's writers, editors and support personnel. "After moving to temporary quarters, we hooked up what could be used and pieced together the network," she says. Backup copies of the department's software were stored off-site, so key applications and data were available within a matter of hours. Still, end users were forced to

Disaster's Price Tag

- ▶ *More than \$3.8 billion in lost revenues and productivity annually*
- ▶ *More than four hours of downtime per occurrence*
- ▶ *An average cost of \$329,000 in lost revenue and worker productivity per occurrence*
- ▶ *An average of 355 worker hours lost per occurrence*
- ▶ *A loss of 38.1 million worker hours annually*
- ▶ *A loss of \$444 million in wages annually*

Source: *Stratus Computer Inc., Marlboro, Mass. A 1992 study of 450 information executives at Fortune 1000 companies.*

cope with a primitive LocalTalk network for more than six weeks before they were moved back to the department's regular quarters, which now include a new Ethernet LAN with Quadra 650 Macintoshes and an Apple Computer Inc. Workgroup Server 60.

"Through all of this we were able to continue putting out news releases and keep everyone working, including the students who write for us," says Hedrick. "It was slow, but we were able to avoid disk swapping."

Hedrick says the experience taught her several practical lessons. "In addition to contingency planning, having a fire-protection system and making backups, I would suggest looking at the physical location of the network's components." She suggests keeping equipment off the floor unless absolutely necessary because even a few inches of water can quickly devastate floor-mounted servers, power strips and other hardware. She also advocates covering all equipment that's not in use with plastic covers. Besides offering protection from dust and other airborne contaminants, the covers will deflect water from sprinklers and hoses.

But having a good plan isn't enough, according to Dewey Baxter, computer operations manager at the Georgia Institute of Technology in At-

lanta. It's also essential to have proper and thorough documentation. "Document everything and see that it's kept up-to-date," says Baxter. "The most common error I see is that one or two folks have all the info in their heads, but it never gets to paper." Unfortunately, because networks are dynamic entities, it's usually impossible for management to keep track of everything without a written, regularly updated blueprint. Then, when a disaster strikes, management has no time to reconstruct network layouts from scratch. "You've got to know what your topology is so that you can work on targeting the problem, not on figuring out who changed what since the last time you checked," adds Baxter.

But before they start thinking about plastic covers and topology blueprints, companies must implement more-fundamental safeguards. Basic protection can be built into a network from the start by ensuring that the environment doesn't offer a single point of failure, says SunGard's Dayanim. "This includes duplicating the key database information across the LAN, having mirrored servers that can take over if the primary server goes down [and] having multiple network pathways, both locally and in a wide area connection," he says. Dayanim also suggests having available an alternate, prewired recovery site—a "hot site"—for network end users in the event of a disaster.

In its zeal to safeguard data and systems, management shouldn't forget to consider other key resources, including telephone lines, electrical service, heating, air conditioning and other "physical" factors. In an infrastructure disaster, a failure of one or more of these services can disintegrate the client/server environment.

Now that computer systems—client/server and otherwise—are closely interwoven into nearly every company's day-to-day business operations, moving to a hot site can mean literally packing up the bulk of a company's employees and sending

Finding the right IT solution is no day at the beach.

With the current wave of technologies available to increase information flow and a sea of consulting firms promising solutions to best apply these technologies to your business, choosing the right IT solution could leave you buried in options. The systems integration professionals at Martin Marietta can provide you with the right mix of technology and real-world experience to successfully realize your enterprise computing goals.

In today's demanding business environment, rapid access to accurate, useful information is critical to your business' success. By utilizing our collaborative approach, that integrates our proven methodologies with your business acumen, we can assist you in designing and developing a system that allows you to reach beyond your current information-management strategy.

So, if you're ready to increase the effectiveness of your information technology, call a Martin Marietta representative at 1-800-213-0582.

WE'LL SIFT THROUGH THE CHOICES TOGETHER.



MARTIN MARIETTA

Management and Data Systems
640 Freedom Business Center
King of Prussia, Pennsylvania 19406
1-800-213-0582

them to a temporary work center that attempts to duplicate the regular workplace. This is typically the case in brokerage, insurance, banking and other businesses where large numbers of staffers need constant access to real-time data pumped through their workstations.

"People" recovery is at least as important as systems recovery, points out William Hewitt, manager of marketing operations for IBM's Business Recovery Services in Sterling Forest, N.Y. "It's great if you can go boot up a file server somewhere else, but if you can't put your people there or get network access, then you really haven't accomplished anything," he says. Hewitt suggests that management consider all the options when scouting for a remote work site, including the facility's size, cost, accessibility and systems support. If the site is located in the same general area as the company, management must also assess the facility's vulnerability to the same environmental conditions that could force a suspen-

sion of ordinary business operations (such as an earthquake or flood).

As client/server networks gain a stronger foothold in business, He-

Companies seeking geographic cures for disaster exposure may be trading one potential cataclysm for another.

witt sees companies expanding their disaster-recovery plans to cover a wider range of functions. New government regulations, particularly in the financial and environmental fields, are forcing many businesses to bolster their planning efforts as well. "For example, for a bank it used to be sufficient from a regulatory standpoint to just have a hot-site subscription," Hewitt says. "Now

they're being asked to have recovery down to the ATM [automatic teller machine] level. This is something new that's forcing a lot of institutions to rethink their plans."

Increased competition is another factor forcing many firms to build extra safeguards into their recovery plans. Companies fear being knocked out of operation while a competitor remains up and running. While the up-front costs of extensive recovery procedures can be high, so can the eventual payoff, in terms of maintaining revenues and holding onto market share.

Emerging technologies could make things easier. Wireless networks, for example, allow managers to create on-the-spot LANs without installing cabling. If workers are forced to relocate from site to site during the recovery period, the network can be moved along with the people and workstations. With cellular, satellite and other radio-link technologies gaining in popularity and decreasing in price, it's also becoming increasingly practical for a temporary wireless network to exchange data with other networks and host computers around the world.

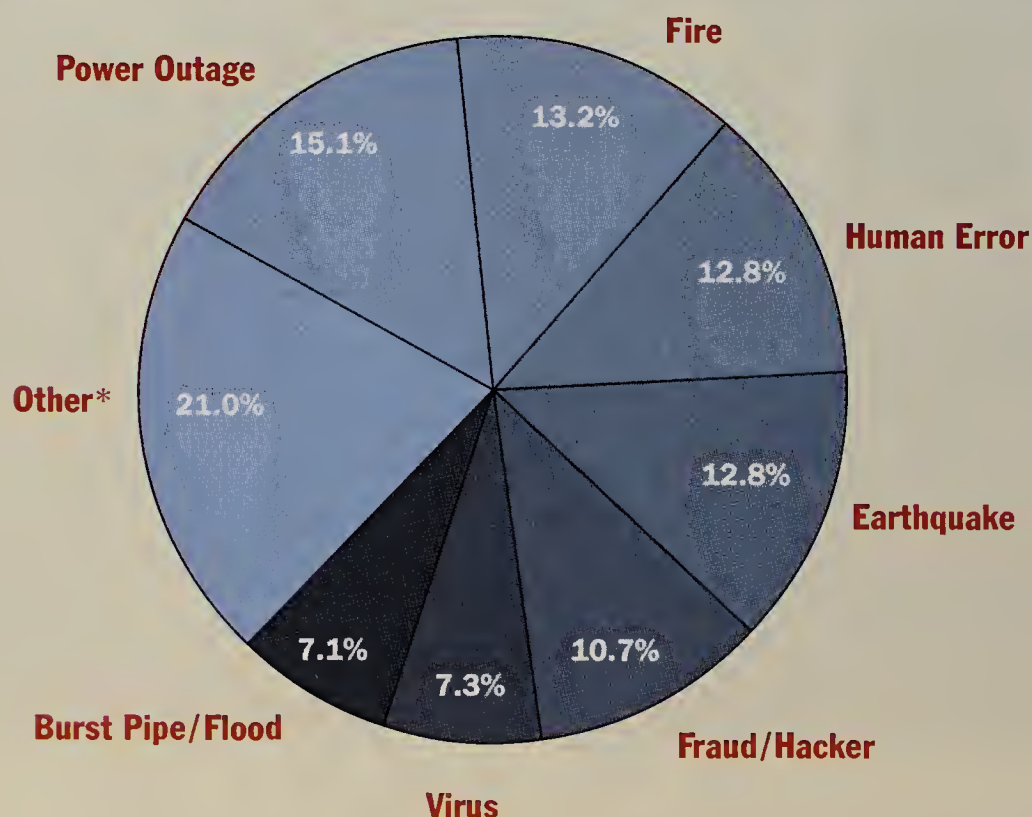
Telecommunications can also play a role. IBM's Business Recovery Services, for example, is developing a product that will allow a server to automatically call up a host system at another location every night to run a backup. In the event of a disaster, the information would be ready for instant use.

To meet the needs of businesses that are using increasingly sophisticated systems, data-recovery support companies are busily adding leading-edge equipment and services. As a result, most hot sites are now prepared to handle the substantial data-storage requirements and network-throughput needs of such rapidly rising technologies as real-time video and document imaging.

Still, says Hewitt, "one thing I've learned in this business is that you can never do enough planning." **CIO**

John Edwards is a freelance writer based in Mt. Laurel, N.J.

Most-Common Disasters



*Includes hardware error, hurricane, network problem, terrorism and software error
Source: Contingency Planning Research Inc., Jericho, N.Y. A 1993 study of 533 U.S. information executives.



**We must admit that the competition for
MAC-PAC® looks quite promising.**

On paper, most manufacturing software claims sound so similar. Full enterprise integration. Global capability. Flexible architecture.

But unlike the competition, when Andersen Consulting developed MAC-PAC® for the IBM® AS/400®, we didn't start with a manufacturing simulation. We

started with decades of practical know-how in virtually every industry, in every corner of the globe.

Nor did we simply model the characteristics of make-to-order, JIT/repetitive and mixed mode environments. We already had vast hands-on experience in each.

So take your choice. Software

based on the thin air of theory, or software grounded in the solid facts of real world experience.

**ANDERSEN
CONSULTING**
Software Products

For more information on MAC-PAC, call 1-800-541-7512 or 1-312-507-6588.

FRONTLINE



BY PORTIA ISAACSON

Taking your data with you when you travel isn't as simple as it used to be. But a few new options have emerged to make the task a little easier.

On the Road

TAKING I.T. WITH YOU

I take my notebook computer nearly everywhere. Even full-featured notebooks, like Toshiba's 4600C and NEC Technologies' Versa E Series, are now light enough to toss in a briefcase or a backpack; I can even pull a computer out of my handbag at a restaurant in the heat of an idea.

The real question, however, is whether I also have with me the data I need. I may be at a client board meeting when I need a copy of my contact-management database, whose home is my workgroup network file server. I may be waiting at my dentist's office when I get an idea about how to change my monster forecast spreadsheet; the most current copy is on my office computer's local hard drive, and an out-of-date (but released to others) copy is on the network file server. On a cross-country flight, I may get the urge to bang out a few pages of my science-fiction novel, the most recent draft of which resides on my home computer. A notebook computer is not very useful if you don't have on it the data you need.

Just a few years ago, taking data with you was a simple matter. You had three choices: You could copy the few, small files you needed onto floppy disks, you could cable your desktop to your notebook and transfer the files using a program like Traveling Software's LapLink, or you could transmit files using a modem to call your desktop or server. A single file was rarely so large that it could not fit on a single floppy or be transferred by LapLink in a very short time.

Today, taking data with you

is more challenging. In today's GUI world, not only have the applications grown in size but data has also grown into the megabyte range as we expand our databases and embed graphics in everything from databases to spreadsheets to word-processing documents. And don't forget those presentations that, more often than not, break the 1.2MB floppy-disk barrier. Our big files will

no longer fit on a single floppy. Even LapLink, which has become a truly awesome program with its file synchronization and remote installation, still requires more patience than

many of us possess to transfer large files across a parallel port or a telephone line.

Recently, I noticed that it took me longer to pack my data than to pack my clothes for a business trip—and I don't travel light. Unpacking is even worse. Although it is easy enough to move files off my notebook to my office PC or my home PC (because no one is allowed to change them in my absence), moving a file to the workgroup file server can be done only if no one has changed the server version. If the server version has been changed, the two sets of changes must be merged; usually it is necessary to enter my changes manually. This is about as much fun as filling out expense reports, so it is given the same urgency.

The hassle factor in finding the right version of a file is approaching the boiling point: It is time for a change.

Juggling Act

A PLACE FOR EVERYTHING

I am considering the options. Perhaps I can have fewer

computers or keep data in fewer places than my current four (file server, office PC, notebook and home PC). Data on the file server is required for sharing calendars, contacts and documents within my workgroup. Data on my office desktop is required because, being of the old school that holds physical possession to be the best form of privacy and security, I feel strongly about keeping some in-process or private files only on my local hard drive. Further, because I am well acquainted with the problems of network management, I also keep backup copies of my essential files on my local hard drive.

Casual users could have a notebook be their only computer (enhanced, perhaps, in the office with a CRT and a full-size keyboard), but I need my local gigabyte drive, extremely high performance and my slots for extra goodies. And since my home computer is the natural place for personal information, such as my Quicken checkbook and the science-fiction novel draft that would raise some coworkers' eyebrows, data is required there as well.

My home computer could be my notebook, except that it is loaded with CD-ROM and Sound Blaster. I need my notebook, moreover, when I am neither at home nor at the office, and I have found that it simplifies file management if I consider all the files on it to be temporary copies of files that permanently reside on one of my other three computers.

So, stuck as I am with three stationary sources of data and one to take along, I have no option but to choose

Traveling Software has sold more than 1 million copies of LapLink since 1987

Today, PCMCIA reader/writers to upgrade desktop PCs are available from 13 manufacturers

The offer HP and Lexmark were hoping we wouldn't make.

Kyocera® Ecosys® page printers are a real problem for the competition. With Cartridge-Free technology, they eliminate the need for expensive (up to \$269 each) laser printer cartridges. This saves you so much money — thousands, even millions of dollars a year — it makes traditional cartridge-based printing wasteful in comparison.

As long as they use cartridges, they won't match Ecosys economy. But now there's something else they can't match — our offer.

Here's the deal:

Buy an Ecosys FS-1500A 10-ppm printer between now and March 31, 1994, and print free for a year — with two free toner refills (in addition to the one packed with your printer) direct from Kyocera*. Just ask your Kyocera representative for details, or call 1-800-2-ECOSYS.

Since Ecosys printers feature a permanent self-cleaning drum, toner is all you need. And since an Ecotone® toner refill costs just \$49, you're practically printing for free even when we aren't giving the toner away.



Compare: Like the FS-1500A, the 18-ppm Ecosys FS-3500A prints at 0.7¢ per page. The HP® LaserJet® 4Si and Lexmark™ IBM® 4039 16L print at 2.1¢ per page†. In a year of high-volume printing, one Ecosys printer can save \$3,000. Network savings can add up to millions.

The lowest-cost printing solution in the industry

With the 10-ppm Ecosys FS-1500A or 18-ppm FS-3500A, Cartridge-Free page printing is more eco-

nomical than any disposable cartridge solution — even if you recycle — because there are no cartridges or cartridge parts to waste. For a free calculator wheel to figure your likely savings, or to reach the nearest Kyocera representative, call **1-800-2-ECOSYS**.



*Offer terms based on InfoCorp study showing typical annual print volume in 7-10 ppm category as 14,400 pages at 5% coverage, three Ecosys Ecotone refills provide approximately 21,000 pages.

†Comparisons based on InfoCorp standards of 5% average page coverage and 16,500 pages per month "high-volume" printing; cartridge list prices as of 8/93; yields from manufacturer information.

Specifications and prices subject to change without notice.

© 1993 Kyocera Electronics, Inc. Kyocera is a registered trademark of Kyocera Corporation. Ecosys and Ecotone are registered trademarks of Kyocera Electronics, Inc. All other trademarks and registered trademarks are the property of Hewlett-Packard Company, Lexmark International, Inc. or International Business Machines Corporation, respectively.

FRONTLINE



one or more ways to pack my data in my notebook computer when I travel and to synchronize it when I return.

Weighing the Choices

WAYS TO GO

Let me count the ways I could do this yet minimize my time spent transferring files and maximize my sanity in file synchronization. Two relatively new choices have been added to our traditional methods: the connection of the notebook computer to the LAN (using, for example, a docking station with LAN connection, parallel-port LAN connection, PCMCIA wired-LAN connection or PCMCIA wireless-LAN connection); and the physical movement of a PCMCIA disk drive between computers with PCMCIA slots. (See "Frontline," *CIO*, Sept. 1, 1993.) Let's consider each possibility.

Connecting the notebook computer to the LAN permits the transfer of data from the desktop PC to the server, and then from the server to the notebook. In a peer-to-peer network like Windows for Workgroups or

Macintosh, files can be moved directly between the desktop PC and the notebook. Moving data among computers on a LAN is much faster than moving it across a parallel-port cable and, perhaps more important, one doesn't need to learn a new program. And having your notebook computer on the LAN when in the office also gives you a second networked PC. I use

mine to look up information on the server (e.g., from the network Computer Select CD-ROM database of computer-industry publications) or to dial information services such as CompuServe

while I am doing something else on my desktop PC. I have found that a docking station such as Toshiba's for the 4600C is the easiest way to connect a notebook to a LAN. No wires, just slide it in. A network cable, a full keyboard and a large CRT are connected to the docking station, so the 4600C has full desktop-computer functionality as soon as it is docked.

Other possibilities for connecting a notebook to a LAN include a parallel-port LAN adapter (e.g., from Xir-

com), PCMCIA wired-LAN connection (e.g., from IBM) and PCMCIA wireless-LAN connection (e.g., from Solectek or Proxim). Unlike the docking station, these involve connecting wires; even the PCMCIA wireless LAN requires connecting an antenna. Parallel-port LAN adapters are the least expensive but may require taping your notebook to your desk to avoid the intermittent LAN connections caused by movement of the notebook. PCMCIA wireless LANs (such as Solectek's WaveLAN-compatible) require a compatible server interface. The wireless LAN adapter has the benefit of allowing users to move around the office building—to a conference room, for example—while maintaining a LAN connection. It does away with the need to copy files from the server to your notebook for in-building movement.

The Drive Way

POWER OF PCMCIA

PCMCIA enables another simple way to transfer files. By upgrading your desktop PC with a PCMCIA

reader/writer (these cost about \$200 and install in an unused floppy-drive bay),

you can actually copy files to one of today's 42MB to 105MB Type III drives (such as those available from Maxtor or MiniStor). Just pull the drive out of the PCMCIA slot on the desktop PC and pop it into the notebook's PCMCIA slot. Think of a PCMCIA hard-disk drive as a big, fast floppy. If your notebook computer gets banged around a lot, you may want to consider one of the new flash drives, which work just like hard disks (well, nearly). Soon, they say, you may even be able to boot from a PCMCIA drive, so potentially one disk drive with all local applications and data could be moved from a desktop PC to a notebook to a home PC. (And if you believe that, I have some swampland in Florida....)

The jury is still out on which of the many data-transfer methods will be preferred. But about one thing there is no question: I am taking IT with me. **CIO**

Portia Isaacson is president of Dream IT Inc., a consultancy and publisher headquartered in Colorado Springs, Colo., dedicated to providing quality business information to customers and creators of frontline IT.

Maxtor's MobileMax 105 PCMCIA hard drive currently holds the record in Type III storage capacity with 105MB

There are very few places where JCPenney associates can't plug into their new communications network.



Advanced technology isn't needed everywhere. But it is creating new opportunities at more than 6,300 information outlets in the state-of-the-art Legacy home office of JCPenney in Dallas.

Marty Holder, JCPenney Project Manager-Communications, says, "Our vision was to install an integrated system that would provide voice, data and video network access for every Legacy workstation."

Southwestern Bell worked side by side with JCPenney to achieve this goal. The result is a local area network and building distribution

system (BDS/LAN) that allows associates to access sales and inventory information, communicate new programs and conduct training, all from a single outlet in their workstations.

Holder says, "We wanted a total integrator for all systems. Southwestern Bell gave us an integrated solution that has translated into real productivity gains, and savings, for our company."

Southwestern Bell can help your business plug into new technology, too. Just call the toll-free number for a free brochure on our many BDS/LAN products.

1-800-255-SWBT (7928) Ext. 693



Call for free
BDS/LAN
information
packet.

 **Southwestern Bell Telephone**

"The One to Call On"®



I N D E X

Page numbers refer to the first page of the article(s) in which the company is mentioned. This index is provided as a service to readers. The publisher does not assume any liability for errors or omissions.

Company Index

AT&T.....	14
Apple Computer Inc.....	68
Aslanis Seafoods Inc.....	14
A.T. Kearney Inc.....	30
Avis Rent-A-Car.....	14
Beslutsmodeller.....	46
Bob's Stores Inc.....	14
Boulevard Bancorp Inc.....	62
CAP Gemini America.....	46
CSC Index Inc.....	62
Campbell Soup Co.....	54
Cargill Inc.....	30
Chrysler Corp.....	14
Churchill Insurance Ltd.....	80
Codd & Date.....	54
Cognos Corp.....	30
Comshare Inc.....	62
ConAgra Inc.....	54
Digital Equipment Corp.....	14
First Bank Systems Inc.....	62
Forrester Research Inc.....	14, 62
Gartner Group.....	54, 62
Gateway Management Consulting..	62
General Atlantic Partners.....	30
Hewlett-Packard Co.....	14, 30
IBM Corp.....	30, 46, 54, 68, 74
IRI Software.....	54
Information Resources Inc.....	54
International Data Corp.....	30
J.D. Edwards & Co.....	46
Johnson & Johnson Inc.....	46
Jury Verdict Research Software...	14
KPMG Peat Marwick.....	62
Kimberly-Clark Corp.....	46
Levi Strauss & Co.....	68
Marcam Corp.....	46, 54
Maxtor Corp.....	74
McDonald's Corp.....	14
MiniStor.....	74
NEC Technologies Inc.....	74
New England Consulting Group...	46
Nielsen Marketing Research.....	54
Nolan, Norton & Co.....	14
Northern Telecom Inc.....	46
Novell Inc.....	24, 74
Personal Products Co.....	46
Pet Inc.....	54
PictureTel.....	46
Playtex Products Inc.....	46
Proxim Inc.....	74
Pyramid Technology Corp.....	80
Reebok International Ltd.....	62
Rhone Poulenc Rorer Pharmaceuticals.....	54
Russell Reynolds Associates Inc...	62
Soltek.....	74

Sprint.....	14
SunGard Recovery Services Inc....	68
Sun Microsystems Computer Corp..	14
SunSystems.....	62
Synon Inc.....	30
Systematics Inc.....	62
Tambrands Inc.....	46
Toshiba America Inc.....	74
Traveling Software Inc.....	74
Viacom International Inc.....	62
Wang Laboratories Inc.....	30
Winterthur Insurance.....	80
Xircom.....	74

Advertiser Index

4th Dimension.....	11
Andersen Consulting.....	73
Booz-Allen & Hamilton.....	40
CIO Publishing Inc.....	20, 20A, 21
Coda Inc.....	59
Comdisco.....	9

Computer Associates Intl. Inc.....	C3, 2, 53
Digital Equipment Corp.....	C2, 27
ExecuTrain.....	45
FourGen Software Inc.....	C4
Gupta Corp.....	25
Hewlett-Packard Co.....	19
IBM Corp.....	28, 37, 42
Information Builders Inc.....	6
Kellogg School.....	78
Kyocera.....	75
Martin Marietta.....	71
MicroAge.....	61
Must Software.....	79
Powersoft.....	34
ROLM.....	69
SAS.....	17
Southwestern Bell.....	77
SunConnect.....	23
SynOptics Communications Inc....	12
System Software Associates.....	15
Unisys Corp.....	4

Editorial, Advertising and Business Offices: 492 Old Connecticut Path, PO Box 9208, Framingham, Massachusetts 01701-9208, (508) 872-8200. **Postal Information:** CIO (ISSN 0894-9301) is published semi-monthly; monthly in July and August; and as a combined issue December 15/January 1 by CIO Publishing Inc., 492 Old Connecticut Path, PO Box 9208, Framingham, Massachusetts 01701-9208. Second-class postage paid at Framingham, MA, and at additional mailing offices. **Reprints:** Copyright 1994 by CIO Publishing Inc. All rights reserved. Reproduction of material appearing in CIO is forbidden without written permission. Send all reprint requests to Permissions Editor, CIO, 492 Old Connecticut Path, PO Box 9208, Framingham, Massachusetts 01701-9208. **Photocopy Rights:** Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by CIO for users through the Copyright Clearance Center (CCC), provided that the base fee of \$3.00 per copy of the article, plus \$.50 per page is paid directly to Copyright Clearance Center, 27 Congress Street, Salem, Massachusetts 01970. Please specify: ISSN 0894-9301. Permission to photocopy does not extend to contributed articles followed by this symbol: \$. **Microfilm:** CIO issues and articles can be purchased on 16mm and 35mm microfilm and on 105mm microfiche through University Microfilms International, Serials Acquisitions Department, 300 N. Zeeb Road, Ann Arbor, Michigan 48106. **Subscriptions:** Address inquiries to CIO, 492 Old Connecticut Path, P.O. Box 9208, Framingham, Massachusetts 01701-9208. CIO is free to qualified information executives. To all others the one-year basic rate is \$98 for U.S. and Canada, \$185 for foreign countries (payable in U.S. funds only). The single copy price is \$7. Please allow 4 to 6 weeks for new subscriptions to begin. **Change of Address:** Please fax a copy of current subscription label along with new address to (508) 872-0618. Allow 4 to 6 weeks for change to take effect. **Postmaster:** Send change of address to CIO, P.O. Box 489, Northbrook, Illinois 60065-9816.

Transforming Information Services: Client-Focused and Quality-Driven Strategies

May 22-25, 1994

For a brochure, please contact
Executive Programs
Kellogg Graduate School of Management
James L. Allen Center
Northwestern University
Evanston, IL 60208-2800
Phone 708-467-7000 • Fax 708-491-4323

Northwestern University

J. L. Kellogg Graduate School of Management

A successful future for information services organizations depends on managers who have learned the value of client service, quality management and flexible organization.

In this program, participants will learn how to

- Adapt proven practices and methods of services marketing and quality management to I/S
- Measure critical quality factors
- Measure and improve client satisfaction
- Promote effective client relationships
- Align I/S goals and priorities with business unit strategies
- Identify the road map and road blocks to transforming the culture of I/S

The program is conducted by faculty from the Kellogg School and I/S practitioners from companies known for high quality products and service.



Kellogg



client/server

confusion

■ There are those who would like you to believe they can help you successfully migrate to the client/server platform overnight. But who do you believe? You know that no one can build truly robust applications in a day. The only way to build data-rich, mission-critical applications is by working together with various trusted partners over time. We have the products and people to help you make client/server a reality. In fact, a great many of the Fortune 1000 companies have been accessing their main-frame data and developing client/server applications with our help for a long time. But our tools weren't invented just to ride on the coattails of client/server. What we offer you is a multi-platform suite of development and reporting tools. Tools that draw their strength from NOMAD's advanced 4GL technology and expand your reach with the graphical reporting power of Front & Center. Proven tools that allow you to build robust applications accessing DB2 and other major data sources such as SQL Server and Oracle from PC and Unix platforms. In short, a way to carefully, intelligently get to client/server without sacrificing everything you've invested in information technology. If you believe, as we do, that building a successful client/server platform is a step-by-step process, take the first step by calling 1-800-441-MUST. We want to work with you.

Helping you migrate to client/server.

MUST SOFTWARE
INTERNATIONAL
Member Thomson Information Technology Group

BENELUX, CANADA, FRANCE, GERMANY, ISRAEL, ITALY, JAPAN, SOUTH AFRICA, SPAIN/PORTUGAL, SWITZERLAND, UNITED STATES, UNITED KINGDOM

NOMAD is a registered trademark and Front & Center is a trademark of U3S International BV. Other products mentioned herein are the trademark or registered trademark of their respective companies.

Premium Service

Churchill Insurance's decision to emphasize fast over face-to-face service has driven the young company into the industry's leading ranks

Traditionally, buying auto insurance in the United Kingdom has been a process as sluggish as navigating London's tangled streets without a map. At rush hour. In heavy fog.

Motorists usually must visit a broker in person and fill out several forms just for a rate quote. Initial quotes may be outdated because some British insurers have been slow to put brokers online, forcing them to consult books or spreadsheets. Customers who purchase a policy typically wait weeks for the required documents.

But 5-year-old Churchill Insurance Ltd. has revved up the process, paring the wait for a rate quote to minutes and the follow-up mailing to two days. "Auto insurance is a negative option. You have to have it," says Carl Ricketts, IT director at the London-based company. His goal: "to make that purchase as painless as possible."

Churchill's success (it ranks comfortably among the United Kingdom's top insurers and expects to sell its millionth policy this year) is a result of its "direct-response" approach. The company has eliminated third-party brokers and conducts all sales and claims business by telephone. Company officials say their system cuts costs, increases efficiency and provides a direct link with customers.

Motorists interested in buying a policy call a toll-free number. A customer-service representative then

records the data and provides up-to-date quotes. Overall, says Ricketts, "the average quote time is about 3.5 minutes." Policies are generated on the spot, and motorists can pay by credit card or electronic funds transfer. Insurance documents arrive by mail within 48 hours. Customers may also make policy changes by phone.

Claims work the same way. After an accident, the policyholder dials a toll-free number. An operator takes the information, faxes the vehicle's location to the closest of Churchill's 1,500 approved garages for retrieval and dispatches an adjuster to the shop to approve repairs. Average time to get that activity in gear: 7.5 minutes. Again, there's no customer paperwork.

Churchill guarantees the repair work for a year. At the customer's request, the insurer will also call a lawyer and help pursue claims against other parties in the accident.

This approach reaps a truckload of benefits for Churchill. "Without a broker, we get the cash immediately," says Ricketts. Because the data is available online immediately, the company knows exactly how much money it's made on a day-to-day basis, allowing it to tailor operations and marketing accordingly. Precise annual renewal figures, perhaps the best measure of customer satisfaction, remain a closely guarded secret. But Ricketts says the rate averages well

above 80 percent, including many motorists who have been with the company since it was formed.

Churchill, which began with a staff of 30, now employs nearly 1,000, including about 550 who work online in sales, claims and accounting. Expansion plans call for a total workforce of 1,200 to 1,500 by the end of 1994, all of them online.

To support that load, Churchill uses Unix-based Pyramid Technology Corp. computers and Niles Series Enterprise Servers running one of the United Kingdom's largest Oracle databases. Last year, the company established a consulting arm, Churchill Technology Ltd., to help other companies use the powerful technology combination.

Looking ahead, Churchill hopes to expand its household insurance division. And the company—which has already launched one Danish subsidiary—plans to roll into other European markets down the road.

Churchill's approach remains highly unusual—though not unique—in both the United Kingdom and the United States, where most insurers rely on field agents. But Churchill officials predict that others will follow suit.

—Anne Stuart

VITAL STATISTICS

Organization: Churchill Insurance Ltd., London; subsidiary of Winterthur Insurance of Switzerland

Application: Telephone-based sales and claims system

Technologies: Unix-based Pyramid Technology Corp. computers and Niles Series Enterprise Servers with an Oracle database; systems linked via Ethernet using TCP/IP protocol

Scope: Currently, 550 of 1,000 employees are online; by year's end, company expects to employ 1,200 to 1,500 people, all online

Project leader: IT Director Carl Ricketts

Objective: To provide policyholders with a quick, paperless method to get rate quotes, file claims and update policies

Payoff: In less than five years, Churchill has become one of the United Kingdom's top auto insurers; the company plans European expansion

Value Added: Churchill offers consulting services to other firms on how they can use a similar IT combination



No Fences. No Boundaries. No Limits. That's The Freedom Of CA90s.

The freedom to choose the best applications without worrying about hardware constraints.

The freedom to right-size your entire computing environment with the best mix of hardware platforms.

And the freedom to integrate and automate all your applications across the many proprietary, closed environments you face today. It's all there inside the most comprehensive architecture ever developed: CA90s.

The only architecture that supports every major hardware platform including IBM, Digital, Hewlett-Packard,



Apple, Fujitsu, Bull, Data General, Tandem and Hitachi. All the major operating systems: MVS, VSE, VM, VMS, UNIX, APPLE, WINDOWS, DOS and OS/2.

And the world's broadest range of integrated software solutions, covering systems management, information management and business applications.

If you're tired of being fenced in, call 1-800-CALL CAI for complete information on CA90s.

The architecture that can set you free.

**COMPUTER
ASSOCIATES**
Software superior by design.

"FourGen Enterprise Financials

and FourGen CASETools™ allowed National Easter Seals to implement our own concepts and designs instead of having to mold around an inflexible "canned" software package.

FourGen Enterprise has the fundamental accounting features needed by large organizations plus the most flexible technology architecture I've seen."

James Sanders
Information Systems Manager
The National Easter Seal Society



Easter Seals Finds Flexibility in FourGen Financials

The key to your organization's competitive advantage lies in the specialized systems and processes you have created. FourGen Enterprise Financials allow you to develop and keep these systems in place by allowing your mission-critical applications to fit you rather than forcing you to fit a rigid structure.

Modifiable-By-Design

A new emphasis on quality drove the National Easter Seal Society to revamp its information systems. For MIS Manager James Sanders, the

directive translated into the need for new accounting software that offered features designed for large organizations plus easy access to information. The combination was found in FourGen Enterprise Financials, the first package built from the ground up to react quickly to changes and report information easily.

FourGen offered Easter Seals a common sense approach to client/server applications which allowed them to put the processing where it is most productive.

Open Systems, Client/Server, 4GL, SQL, and

CASE technologies; these are the ingredients in FourGen's formula resulting in the most productive, least costly, mission-critical computing.

Satisfied Customers Worldwide

FourGen's success at Easter Seals is being duplicated at Motorola, Texaco, AT&T, KFC, and other FourGen customers worldwide. Learn more about these companies' success with FourGen's "Customer Showcase." To request your **free** copy, call **800-333-4436** and mention ad #AEC-139.

FourGen Software, Inc.: 206-522-0055 Fax: 206-522-0053 • European Office: +31 (0)3402 74783 Fax: +31 (0)3402 74784

FourGen Software, Inc. 115 NE 100th Street, Seattle, WA 98125-8098

FourGen is a registered trademark of FourGen Software Technologies, Inc. Copyright © 1994 FourGen Software Technologies, Inc. All rights reserved. A-139 1/94

FOURGEN
Low Risk Client/Server Mainframe Replacement™